Shahnan.Shah
10/781499


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-key terms

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                E METHIONINE/CN
L1            2 S E3
                E CYSTEINE/CN 5
L2            2 S E3
                E CYSTEIN/CN 5
L3            1 S E3
L4            6 S (THREONINE OR LYSINE OR ISOLEUCINE)/CN
                E CARBOHYDRATES/CN 5
                E CARBOHYDRATE/CN 5
L5           10 S L1 OR L2 OR L3 OR L4
                E NADPH/CN 5
L6            1 S E3
                E NADP/CN 5
L7            1 S E3
L8            2 S L6 OR L7

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FILE COVERS 1907 - 16 Mar 2006 VOL 144 ISS 12
FILE LAST UPDATED: 15 Mar 2006 (20060315/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

L1	2	SEA FILE=REGISTRY ABB=ON PLU=ON METHIONINE/CN
L2	2	SEA FILE=REGISTRY ABB=ON PLU=ON CYSTEINE/CN
L3	1	SEA FILE=REGISTRY ABB=ON PLU=ON CYSTEIN/CN
L4	6	SEA FILE=REGISTRY ABB=ON PLU=ON (THREONINE OR LYSINE OR ISOLEUCINE)/CN
L5	10	SEA FILE=REGISTRY ABB=ON PLU=ON L1 OR L2 OR L3 OR L4
L6	1	SEA FILE=REGISTRY ABB=ON PLU=ON NADPH/CN
L7	1	SEA FILE=REGISTRY ABB=ON PLU=ON NADP/CN
L8	2	SEA FILE=REGISTRY ABB=ON PLU=ON L6 OR L7
L12	16860	SEA FILE=HCAPLUS ABB=ON PLU=ON (MICROORGANISM OR MICRO ORGANISM)(10A)(PREP? OR PRODUCE# OR PRODUCING OR PROD# OR MANUF?)
L13	3502	SEA FILE=HCAPLUS ABB=ON PLU=ON L12 AND (L5 OR METHIONINE OR CYSTEIN# OR THREONINE OR LYSINE OR ISOLEUCINE OR ISO LEUCINE OR SUGAR OR CARBOHYDRATE OR NUCLEIC OR DNA OR DEOXYRIBONUCLEIC OR DEOXY RIBONUCLEIC OR LIPID OR LYS OR MET OR CYS OR THR OR LYS OR ILE)
L14	77	SEA FILE=HCAPLUS ABB=ON PLU=ON L13 AND (L8 OR NADPH OR NADP OR (COENZYME OR CO ENZYME)(W)(II OR 2) OR NICOTINAMIDE ADENINE(2W)PHOSPHATE OR (TRIPHOSPHOPYRIDINE OR TRI(W)(PHOS PHOPYRIDINE OR PHOSPHO PYRIDINE) OR TRIPHOSPHO PYRIDINE)(W) NUCLEOTIDE)
L15	5	SEA FILE=HCAPLUS ABB=ON PLU=ON L14 AND CULTUR?

L15 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 10 Sep 2004
ACCESSION NUMBER: 2004:740475 HCAPLUS
DOCUMENT NUMBER: 141:239279
TITLE: Method for production of evolved microorganisms with modified metabolic pathways
INVENTOR(S): Chateau, Michel; Gonzalez, Benjamin; Meynial-Salles, Isabelle; Soucaille, Philippe Noeel Paul; Zink, Olivier
PATENT ASSIGNEE(S): Metabolic Explorer, Fr.
SOURCE: PCT Int. Appl., 113 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004076659	A2	20040910	WO 2004-FR354	20040217
WO 2004076659	A3	20041216		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
FR 2851256	A1	20040820	FR 2003-1924	20030218
FR 2851255	A1	20040820	FR 2003-5768	20030514
FR 2854902	A1	20041119	FR 2003-5769	20030514
FR 2862067	A1	20050513	FR 2003-13054	20031106
EP 1597364	A2	20051123	EP 2004-711626	20040217
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
PRIORITY APPLN. INFO.:			FR 2003-1924	A 20030218
			FR 2003-5768	A 20030514
			FR 2003-5769	A 20030514
			FR 2003-13054	A 20031106
			WO 2004-FR354	W 20040217

AB The invention relates to a method for the **preparation** of evolved **microorganisms** which permit a modification of metabolic pathways, characterized in comprising the following steps: (a) **production** of a modified **microorganism** by genetic modification of initial microbial in order to inhibit the **production** of or the consumption of a metabolite when the **microorganism** is cultivated in a defined medium which also affects the capacity of the microorganism for growth, (b) **culture** of the modified microorganisms previously obtained in said defined medium to induce evolution where it might be necessary to add a co-substrate to the defined medium in order to permit said evolution, (c) selection of modified microorganisms which are capable of growth in the defined medium, optionally with a co-substrate. Thus, E. coli ΔMetE mutants were prepared These **methionine** synthase deletion mutants are **Met** auxotrophs. Growth of these mutants in minimal medium containing methylmercaptan resulted in the growth of E. coli strains with **methionine** synthase activity. This activity was supplied by a mutated cystathionine γ-synthase gene (metB*). The Km's for methylmercaptan of MetB (wild-type) and of MetB* were 277 and 6 mM, resp. The corresponding Vmax values were 13.9 and 5.6 mU/mg protein, resp. The Km (for **cysteine**) and Vmax of the cystathionine γ-synthase activity of the MetB* enzyme were reduced 13-fold. Comparison of wild-type and mutant E. coli grown on minimal medium containing glucose and methylmercaptan indicated that the mutant produced more intracellular Ala, pyruvate, ketobutyrate, and 2-ketoisocaproate and less Trp, NVal, NLeu, Leu, and **Met**. Addnl., the mutant produced more extracellular Glu, **Ile**, **Thr**, Val, and 2-ketoisocaproate and less pyruvate, NLeu, and Trp.

IT **52-90-4**, L-**Cysteine**, biological studies
56-87-1, L-**Lysine**, biological studies **63-68-3****
* , L- ***Methionine**, biological studies **72-19-5**, L-**Threonine**, biological studies **73-32-5**, L-**Isoleucine**, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study) (biosynthetic pathway for; method for **production** of evolved **microorganisms** with modified metabolic pathways)

IT **53-57-6**, **NADPH** **53-59-8**, **NADP**
RL: BSU (Biological study, unclassified); BIOL (Biological study) (biosynthetic pathway involving; method for **production** of evolved **microorganisms** with modified metabolic pathways)

L15 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 16 May 2000
ACCESSION NUMBER: 2000:316789 HCAPLUS
DOCUMENT NUMBER: 132:333448
TITLE: Enzymic manufacture of 5'-GMP from 5'-IMP
INVENTOR(S): Kawasaki, Hisashi; Takenaka, Yasuhiro; Matsui, Hiroshi; Kurahashi, Osamu
PATENT ASSIGNEE(S): Ajinomoto Co., Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000135097	A2	20000516	JP 1998-308796	19981029
PRIORITY APPLN. INFO.:			JP 1998-308796	19981029

AB GMP, useful as a umami seasoning, is manufactured by treatment of IMP, **NADP**+, and NH3 with GMP reductase (I). I may be derived from Escherichia coli and may be **produced** by recombinant **microorganisms** in which activity of I is increased due to amplification of gene for I. E. coli JM109 was transformed with a plasmid pUCguaC bearing gene for I prepared by PCR amplification using chromosomal **DNA** of E.coli K12 W3110. The transformants were **cultured** in a LB medium containing ampicillin and IPTG for 8 h to give a cell free crude preparation of I. A mixture of Tris-HCl, **NADP**+, (NH2)2SO4, IMP, and the cell free extract was incubated at 37° for 24 h to give 0.5% GMP.

IT **53-59-8**, **NADP**
RL: CAT (Catalyst use); USES (Uses)
(enzymic manufacture of 5'-GMP from 5'-IMP, **NADP**, NH3, and GMP reductase)

L15 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 12 Jan 1999
ACCESSION NUMBER: 1999:20711 HCAPLUS
DOCUMENT NUMBER: 130:207116
TITLE: Microaerobic **lysine** fermentations and metabolic flux analysis
AUTHOR(S): Hua, Qiang; Fu, Peng-Cheng; Yang, Chen; Shimizu, Kazuyuki
CORPORATE SOURCE: Department of Biochemical Engineering and Science, Kyushu Institute of Technology, Fukuoka, 820,

Japan
SOURCE: Biochemical Engineering Journal (1998), 2(2), 89-100
CODEN: BEJOFV; ISSN: 1369-703X
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Oxygen supply is known to have an important influence on microaerobic production of amino acids, and several researches have shown that the behavior of many L-**lysine-producing microorganisms** under various aeration conditions are different. In order to investigate the fermentative behavior under microaerobic condition using Corynebacterium glutamicum ATCC 21253, several expts. were carried out where dissolved oxygen concentration was controlled at either 1% or 5%, as well as fully aerated condition. The calcn. of intracellular metabolic fluxes was made to illustrate two kinds of metabolic characteristics observed in microaerobic **cultures**. Evaluated flux distributions indicated that the activities of TCA cycle enzymes decreased with the decrease in oxygen supply, resulting in the amplified phosphoenolpyruvate (PEP) carboxylation which contributed to the 30% of increase in **lysine** yield for the microaerobic **culture** at 5% DO concentration as compared with the case of aerobic fermentation Further anal. indicates that **NADPH** may not be the yield-limiting factor, while low split-ratio of PEP carboxylation at PEP or aspartate branch at oxaloacetate is considered to limit **lysine** production under microaerobic conditions.

IT **56-87-1P, Lysine,** preparation
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)
(microaerobic **lysine** fermns. and metabolic flux anal.)

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 14 Mar 1997
ACCESSION NUMBER: 1997:174707 HCAPLUS
DOCUMENT NUMBER: 126:314299
TITLE: Metabolic carbon labeling systems. Modeling, simulation, analysis, and evaluation
AUTHOR(S): Wiechert, Wolfgang
CORPORATE SOURCE: Inst. Biotechnologie, Forschungszentrum Juelich G.m.b.H., Juelich, D-52425, Germany
SOURCE: Berichte des Forschungszentrums Juelich (1996), Juel-3301, 1-238 pp.
CODEN: FJBEE5; ISSN: 0366-0885
DOCUMENT TYPE: Report
LANGUAGE: German

AB Modeling of living systems was described by in vivo stationary flux determination as a tool for metabolic engineering, based on 13C labeling from extracted amino acids and a math. model for estimation of all intracellular fluxes. NMR spectroscopy and metabolite balancing were combined for determination of fluxes. 13C-labeled substrate was added to continuously **cultured microorganisms** followed by cell hydrolysis, **preparative** anal. separation, and NMR spectroscopy of labeled amino acids. Metabolic 13C-labeling systems and exchange fluxes were

described in a model, and the effects of exchange fluxes on the metabolic labeling system were analyzed. Equations of balancing for metabolite, C atom, and isotopomer pools were defined, expressing quant. the relation between fluxes and parts of labeling. The anal. of stability of C labeling, dissipative systems, and isotopomer labeling systems were simulated, and numerical aspects of simulation were discussed. The distribution of labeling in the cyclic pentose phosphate pathway of the yeast Pichia stipitis was studied by simulation. Information values of measurement data regarding the estimation of intracellular fluxes were estimated by statistical methods. The stationary fluxes in central metabolism of Corynebacterium glutamicum were determined and compared with a nonstationary labeling experiment, and differences in model and measurement data were discussed. A comprehensive approach exclusively based on the fundamental enzyme reactions, the fate of the C atoms of individual reactions, and the metabolite balance of the **culture** were developed, and no information on the energy balance was required.

IT **53-57-6, NADPH 70-54-2, Lysine**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(modeling, simulation, anal., and evaluation of metabolic C labeling systems)

L15 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 12 May 1984
ACCESSION NUMBER: 1979:588488 HCAPLUS
DOCUMENT NUMBER: 91:188488
TITLE: Enzymatic conversion of aclacinomycin A to Y by a specific oxidoreductase in Streptomyces
AUTHOR(S): Yoshimoto, Akihiro; Ogasawara, Tatsuo; Kitamura, Iwao; Oki, Toshikazu; Inui, Taiji; Takeuchi, Tomio; Umezawa, Hamao
CORPORATE SOURCE: Cent. Res. Lab., Sanraku-Ocean Co. Ltd., Kanagawa, Japan
SOURCE: Journal of Antibiotics (1979), 32(5), 472-81
CODEN: JANTAJ; ISSN: 0021-8820
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB A specific oxidoreductase converting aclacinomycin A (I) to a new analog, aclacinomycin Y (II) was purified to apparent homogeneity from the **culture** filtrate of aclacinomycin-**producing microorganisms**. The isolated enzyme was a weakly acidic protein (isoelec. point, 5.9) with a mol. weight of .apprx.72,000. The enzymic reaction required O2 and had a pH optimum at 5.5. NAD, **NADP**, FAD, FMN, phenazine methosulfate, and 2,6-dichlorophenolindophenol were all inactive as electron acceptors in the enzyme reaction. The enzyme catalyzed the oxidation of the terminal **sugar**, L-cinerulose, of the trisaccharide moiety of I to L-aculose (2,3,6-trideoxyhex-2-enopyranos-4-ulose) with removal of 2 electrons. The enzyme is thus an oxidase capable of modifying anthracyclic triglycosides by oxidizing their terminal **sugars**.

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L16 25 S L15
L17 25 DUP REM L16 (0 DUPLICATES REMOVED)

L17 ANSWER 1 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 2005-533151 [54] WPIDS
DOC. NO. CPI: C2005-161616
TITLE: New recombinant microorganism of the Enterobacteriaceae family, containing enhanced or over-expressed yaaU open reading frame that encodes polypeptide, useful for production of L-amino acids e.g. L-**isoleucine** and L-valine.
DERWENT CLASS: B05 D16 E16
INVENTOR(S): DUSCH, N
PATENT ASSIGNEE(S): (DEGS) DEGUSSA AG; (DUSC-I) DUSCH N
COUNTRY COUNT: 108
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2005064000	A1	20050714	(200554)*	EN	56
RW: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW					
DE 10361268	A1	20050728	(200554)		
US 2005153403	A1	20050714	(200554)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2005064000	A1	WO 2004-EP14082	20041210
DE 10361268	A1	DE 2003-10361268	20031224
US 2005153403	A1 Provisional	US 2004-607362P	20040907
		US 2004-17120	20041221

PRIORITY APPLN. INFO: DE 2003-10361268 20031224
AN 2005-533151 [54] WPIDS
AB WO2005064000 A UPAB: 20050823
NOVELTY - Recombinant microorganism (I) of the Enterobacteriaceae family (which contains an enhanced or over-expressed yaaU open reading frame (ORF) that encodes a polypeptide (which is annotated as a putative **sugar** transporter and produces L-amino acids in an improved manner)) is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) a process for **preparing** L-amino acids by fermenting recombinant **microorganisms** of the Enterobacteriaceae family, characterized in that: the desired L-amino acid-**producing microorganisms**, in which the yaaU ORF, or nucleotide sequence or alleles encoding its gene products, is/are enhanced, in particular over-expressed, are **cultured** in a medium under conditions under which the desired L-amino acid is enriched in the medium or in the cells; and the desired L-amino acid is isolated, with constituents of the fermentation broth, and/or the biomass remaining in its/their entirety or in portions (from at least 0 to 100 %) in the isolated product or being removed completely; and

(2) preparation of (I).

USE - (I) is useful for preparing L-amino acids (L-asparagine, L-serine, L-glutamate, L-glycine, L-alanine, L-**cysteine**, L-valine, L-**methionine**, L-proline, L-**isoleucine**, L-leucine, L-tyrosine, L-phenylalanine, L-histidine, L-**lysine**, L-tryptophan, L-arginine or L-homoserine; preferably L-**isoleucine**, L-valine, L-**methionine**, L-homoserine, L-tryptophan or L-**lysine**) (claimed).

ADVANTAGE - In the desired L-amino acid-**producing microorganisms**, the yaaU ORF, or nucleotide sequence or alleles encoding its gene products, is/are enhanced, in particular over-expressed; and the desired L-amino acid is isolated, with constituents of the fermentation broth, and/or the biomass remaining in its/their entirety or in portions (from at least 0 to 100%) in the isolated product or being removed completely (claimed).

Dwg.0/1

L17 ANSWER 2 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 2004-757988 [74] WPIDS
DOC. NO. CPI: C2004-266056
TITLE: Production of L-amino acids e.g. L-**threonine** by fermentation involves **culturing** recombinant family Enterobacteriaceae **microorganisms producing** L-amino acid and having overexpressed yfiD open reading frame and/or pf1B gene; and isolating.
DERWENT CLASS: B05 D16 E16
INVENTOR(S): FARWICK, M; RIEPING, M
PATENT ASSIGNEE(S): (DEGS) DEGUSSA AG; (FARW-I) FARWICK M; (RIEP-I) RIEPING M
COUNTRY COUNT: 109
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2004090149	A1	20041021	(200474)*	EN	52

RW: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM

ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ
DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE
KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI
NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT
TZ UA UG UZ VC VN YU ZA ZM ZW
DE 10316109 A1 20041021 (200474)
US 2004235122 A1 20041125 (200478)
EP 1611245 A1 20060104 (200603) EN
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU
LV MC MK NL PL PT RO SE SI SK TR

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2004090149	A1	WO 2004-EP3207	20040326
DE 10316109	A1	DE 2003-10316109	20030409
US 2004235122	A1	US 2004-817431	20040405
EP 1611245	A1	EP 2004-739070	20040326
		WO 2004-EP3207	20040326

FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 1611245	A1 Based on	WO 2004090149

PRIORITY APPLN. INFO: DE 2003-10316109 20030409
AN 2004-757988 [74] WPIDS
AB WO2004090149 A UPAB: 20041117
NOVELTY - Production of L-amino acids by fermentation of recombinant Enterobacteriaceae involves **culturing microorganisms producing** L-amino acid and having overexpressed yfiD open reading frame (ORF) and/or pf1B gene or nucleotide sequences coding for the gene products; and isolating amino acid.

DETAILED DESCRIPTION - Production of L-amino acids by fermentation of recombinant microorganisms of Enterobacteriaceae family involves:

(1) **culturing microorganisms producing** L-amino acid and having overexpressed yfiD open reading frame (ORF) and/or pf1B gene or nucleotide sequences coding for the gene products; and

(2) isolating amino acid in which optional constituents of the fermentation broth and/or entire or portions (0 - 100%) of the biomass, optionally remain.

INDEPENDENT CLAIMS are included for the following:

(1) method (M) for the production of L-**threonine** involving fermenting microorganisms of Enterobacteriaceae family having enhanced genes for the biosynthetic pathway of L-**threonine** selected from at least one of:

(a) the thrABC operon coding for aspartate kinase, homoserine dehydrogenase, homoserine kinase or **threonine** synthase; the pyc gene coding for pyruvate carboxylase;

(b) the pps gene for phosphoenolpyruvate synthase;

(c) the ppc gene coding for phosphoenolpyruvate carboxylase;

(d) the genes pntA ad pntB coding for transhydrogenases;

(e) the gene rhtB imparting homoserine resistance;

(f) the mqo gene coding for malate:quinone oxidoreductase;

(g) the gene rhtC imparting **threonine** resistance;
(h) the thrE gene coding for the **threonine** export protein;
(i) the gdhA gene coding for glutamate dehydrogenase;
(j) the hns gene coding for the **DNA** bonding protein HLP-II;
(k) the pgm gene phosphoglucomutase;
(l) the fba gene coding for fructose biphosphate aldolase;
(m) the ptsH gene coding for phosphohistidine protein hexose phosphotranaferase;
(n) the ptsI gene coding for enzyme I of the phosphotransferase system;
(o) the crr gene coding for the glucose-specific IIA component;
(p) the ptsG gene coding for the glucose-specific IIBC component;
(q) the irp gene coding for the regulator of the leucine regulon;
(r) the csrA gene coding for the global regulator Csr;
(s) the fadA gene coding for the regulator of the fad regulon;
(t) the iclR gene coding for the regulator of central intermediary metabolism;
(u) the mopB gene coding for the 10 kDa chaperon;
(v) the ahpC gene coding for the small subunit of alkyl hydroperoxide reductase;
(w) the ahpF gene coding for the large subunit of alkyl hydroperoxide reductase;
(x) the cysK gene coding for cysteine synthase A;
(y) the cysB gene coding for the regulator of the cys regulon;
(z) the cysJ gene coding for the flavoprotein of NADPH sulfite reductase;
(a') the cysH gene coding for adenylyl sulfate reductase;
(b') the phoR gene coding for the positive regulator PhoB of the pho regulon;
(c') the phoR gene coding for the sensor protein of the pho regulon;
(d') the phoE gene coding for the protein E of the outer cell membrane;
(e') the pykF gene coding for pyruvate kinase I, which is stimulated by fructose;
(f') the pfkB gene coding for 6-phosphofructokinase II;
(g') the male gene coding for the periplasmic binding protein of maltose transport;
(h') the soda gene coding for superoxide dismutase;
(i') the rseA gene coding for a membrane protein with anti-sigmaE activity;
(j') the rseC gene coding for a global regulator of the sigmaE factor;
(k') the sucA gene coding for the decarboxylase subunit of 2-ketoglutarate dehydrogenase;
(l') the sucB gene coding for the dihydrolipoyl transsuccinase E2 subunit of 2-ketoglutarate dehydrogenase;
(m') the sucC gene coding for the beta -subunit of succinyl-CoA synthetase;
(n') the sucD gene coding for the alpha -subunit of succinyl-CoA synthetase;
(o') the adk gene coding for adenylate kinase;
(p') the hdeA gene coding for a periplasmic protein with chaperonin-type function;
(q') the icd gene coding for isocitrate dehydrogenase;
(r') the mglB gene coding for the periplasmic galactose-binding transport protein;

(s') the lpd gene coding for dihydrolipoamide dehydrogenase;
(t') the aceE gene coding for the E1 component of the pyruvate-dehydrogenase complex;
(u') the sceF gene coding for the E2 component of the pyruvate-dehydrogenase complex;
(v') the pepB gene coding for aminopeptidase B;
(w') the aldH gene coding for aldehyde dehydrogenase;
(x') the bfr gene coding for the iron-storage homoprotein;
(y') the udp gene coding for uridine phosphorylase; or
(z') the resB gene coding for the regulator of sigmaE-factor activity; and
(2) microorganisms of the Enterobacteriaceae family (preferably genus Escherichia)) in which the yfiD ORF and/or the pf1B gene or nucleotide sequence coding for their gene product are present in enhanced or overexpressed form.

USE - For the production of L-amino acids (such as L-asparagine, L-serine, L-glutamate, L-glycine, L-alanine, L-cysteine, L-valine, L-methionine, L-isoleucine, L-leucine, L-tyrosine, L-phenylalanine, L-histidine, L-lysine, L-tryptophan and L-arginine) by fermentation of recombinant microorganisms (claimed).

ADVANTAGE - The method results in an enhanced production of L-amino acids. The enhancement of yfiD ORF and pf1B gene enhances the enzyme(s) of the known threonine-biosynthesis pathway, enzymes of the anaplerotic metabolism, enzymes for the production of reduced nicotinamide adenine dinucleotide phosphate, enzymes of glycolysis, PTS enzymes and/or enzymes of sulfur metabolism, and hence the production of L-amino acids.

Dwg.0/2

L17 ANSWER 3 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER:	2004-653418 [63] WPIDS
CROSS REFERENCE:	2004-618123 [60]; 2004-618124 [60]
DOC. NO. CPI:	C2004-233872
TITLE:	New evolved microorganisms with altered metabolic pathways, useful e.g. for production of amino acids, are selected as mutants able to grow on defined media.
DERWENT CLASS:	B04 D16
INVENTOR(S):	CHATEAU, M; SOUCAILLE, P N P; ZINK, O; GONZALEZ, B; MEYNIAL, S I; MEYNIAL-SALLES, I
PATENT ASSIGNEE(S):	(META-N) METABOLIC EXPLORER; (CHAT-I) CHATEAU M; (GONZ-I) GONZALEZ B; (MEYN-I) MEYNIAL-SALLES I; (SOUC-I) SOUCAILLE P N P; (ZINK-I) ZINK O
COUNTRY COUNT:	109

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2004076659	A2	20040910	(200463)*	FR	113
RW: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW					
FR 2854902	A1	20041119	(200477)		
US 2005054060	A1	20050310	(200519)		
FR 2862067	A1	20050513	(200537)		

EP 1597364 A2 20051123 (200577) FR
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR
BR 2004007600 A 20060214 (200615)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2004076659	A2	WO 2004-FR354	20040217
FR 2854902	A1	FR 2003-5769	20030514
US 2005054060	A1	US 2004-781499	20040218
FR 2862067	A1	FR 2003-13054	20031106
EP 1597364	A2	EP 2004-711626	20040217
		WO 2004-FR354	20040217
BR 2004007600	A	BR 2004-7600	20040217
		WO 2004-FR354	20040217

FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 1597364	A2 Based on	WO 2004076659
BR 2004007600	A Based on	WO 2004076659

PRIORITY APPLN. INFO: FR 2003-13054 20031106; FR 2003-1924 20030218; FR 2003-5768 20030514; FR 2003-5769 20030514

AN 2004-653418 [63] WPIDS
CR 2004-618123 [60]; 2004-618124 [60]
AB WO2004076659 A UPAB: 20060302
NOVELTY - Method for **preparing** evolved **microorganisms** (A) with modified metabolic pathways.

DETAILED DESCRIPTION - Method for **preparing** evolved **microorganisms** (A) with modified metabolic pathways comprises:

(a) genetic modification of a microorganism to inhibit production or consumption of a metabolite when it is grown on a defined medium, thus affecting its ability to grow;

(b) growing the modified organism in the defined medium so that evolution can occur, optionally with addition of a co-substrate to allow evolution; and

(c) selecting as (A) cells able to grow on the medium, optionally in presence of co-substrate.

INDEPENDENT CLAIMS are also included for the following:

(1) (A) produced by the new method;

(2) method for producing an evolved protein (I) by **culturing** (A);

(3) evolved gene (II) that encodes (I); and

(4) (I) as new compounds.

USE - The evolved microorganisms (A), or evolved proteins (I) expressed by them, are useful in biotransformation processes, especially those involving **NADPH**-dependent enzymes, particularly synthesis of amino acids (**Met**, **Cys**, **Thr**, **Lys** or **Ile**) but also synthesis of **nucleic** acids or **lipids**, and metabolism of **sugars**.

ADVANTAGE - (A) provide more efficient production of selected metabolites than parent strains.

Dwg.0/13

L17 ANSWER 4 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 2004-450374 [42] WPIDS
DOC. NO. CPI: C2004-168802
TITLE: Metabolically engineered **microorganism**, useful to **produce** e.g. ethanol, lactic acid or antibiotics with decreased production of undesired metabolic products, comprises two operative metabolic pathways.
DERWENT CLASS: B04 B05 D16 E17
INVENTOR(S): BRO, C; NIELSEN, J; REGENBERG, B
PATENT ASSIGNEE(S): (FLUX-N) FLUXOME SCI AS
COUNTRY COUNT: 108
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2004048559	A1	20040610	(200442)*	EN	41
RW: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW					
AU 2003292106	A1	20040618	(200471)		
EP 1565554	A1	20050824	(200556)	EN	
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR					
BR 2003016552	A	20051004	(200566)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2004048559	A1	WO 2003-EP13231	20031125
AU 2003292106	A1	AU 2003-292106	20031125
EP 1565554	A1	EP 2003-767646	20031125
		WO 2003-EP13231	20031125
BR 2003016552	A	BR 2003-16552	20031125
		WO 2003-EP13231	20031125

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2003292106	A1	Based on	WO 2004048559
EP 1565554	A1	Based on	WO 2004048559
BR 2003016552	A	Based on	WO 2004048559

PRIORITY APPLN. INFO: GB 2002-27435 20021125
AN 2004-450374 [42] WPIDS
AB WO2004048559 A UPAB: 20040702
NOVELTY - Metabolically engineered microorganism (I) has one operative metabolic pathway (where a metabolite (M1) is transformed in presence of an enzyme (E1) into a second metabolite (M2), which is transformed into a further metabolite (M3) in presence of an enzyme (E2)) and a second operative metabolic pathway (where (M1) is transformed in

presence of an enzyme (E3) into (M3) without the involvement of (E2)).

DETAILED DESCRIPTION - Metabolically engineered micro-organism (I) has one operative metabolic pathway (in which a metabolite (M1) is transformed into a second metabolite (M2) in a reaction (where nicotinamide adenine dinucleotide (NAD) is a cofactor for an enzyme (E1)) that produces reduced nicotinamide adenine dinucleotide (NADH) and in which (M2) is transformed into at least one further metabolite (M3) in a reaction catalyzed by a second enzyme (E2)) and a second operative metabolic pathway (characterized by an enzyme activity in excess of a native level in respect of a third enzyme (E3) catalyzing a non-reversible reaction (where **NADP** is a cofactor and **NADPH** is a product) in which (M1) is transformed into (M3) without the involvement of (E2)).

An INDEPENDENT CLAIM is also included for a genetically transformed microorganism containing one or more copies of an heterologous **DNA** sequence encoding non-phosphorolating glyceraldehyde-3-phosphate dehydrogenase (GAPN) operatively associated with an expression signal and having a functional native or heterologous expression capability for glyceraldehyde-3-phosphate dehydrogenase (EC 1.2.1.12) (GAPDH).

USE - **Culturing** of (I) is useful to produce a desired metabolic product (preferably ethanol, lactic acid, citric acid, an amino acid or an antibiotic) with decreased production of an undesired metabolic product (preferably glycerol, acetate or an amino acid) (claimed).

ADVANTAGE - (I) allows the production of high yields of desired metabolic products with reduced by-products. Only one genetic change is required in the process and the activity of the enzyme only affects the specific reaction it catalyzes, so that the growth rate is not affected.

Dwg.0/2

L17 ANSWER 5 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 2004-310462 [29] WPIDS
DOC. NO. CPI: C2004-118411
TITLE: **DNA** encoding asymmetric carbonyl reducing enzyme having specific physicochemical properties, useful for producing industrial optically active 2-halo-1-(substituted-3-nitrophenyl) ethanol.
DERWENT CLASS: B04 D16
PATENT ASSIGNEE(S): (ASAH) ASAHI KASEI PHARMA KK
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 2004105089	A	20040408	(200429)*		49

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2004105089	A	JP 2002-272095	20020918

PRIORITY APPLN. INFO: JP 2002-272095 20020918
AN 2004-310462 [29] WPIDS
AB JP2004105089 A UPAB: 20051014
NOVELTY - **DNA** (I) encoding asymmetric carbonyl reducing

enzyme (II) has physicochemical properties:

(a) (II) catalyzes the conversion of 2-halo-1-(substituted-3-nitrophenyl) ethanone to 2-halo-1-(substituted-3-nitrophenyl) ethanol;

(b) (II) acts on 2-chloro-1-(3-nitrophenyl) ethanone and acetophenone;

(c) (I) utilizes **NADPH** as coenzyme; and

(d) relative activity of (II) with respect to highest activity is 95% or more at pH 4-7.

DETAILED DESCRIPTION - **DNA** (I) encoding asymmetric carbonyl reducing enzyme (II) having the following physicochemical properties:

(a) (II) catalyzes the reaction (1);

(b) (II) acts on 2-chloro-1-(3-nitrophenyl) ethanone and acetophenone and produces (R)-2-chloro-1-(3-nitrophenyl) ethanol, (II) has asymmetric reduction activity which produces (S)-1-phenyl ethanol, and (II) does not have substantial alcohol dehydrogenation activity to on (R)-1-phenyl ethanol and 2-propanol;

(c) (I) uses **NADPH** as coenzyme and does not substantially utilize NADH; and

(d) the relative activity of (II) with respect to highest activity is 95 % or more at pH 4-7 and is 80 % at pH 3 and 8.

(II) encoded by (I) has a 251 amino acid sequence (S1), as given in the specification or has (S1) in which one or more amino acids are substituted, deleted or inserted, where (II) has the physicochemical properties such as (a), (b) and (c) as mentioned above. (I) consist of a sequence from 80-832 nucleotides of a 899 nucleotide sequence (S2), as given in the specification or consist of a **DNA** that can hybridize under stringent conditions with the above sequence.

R10 = hydrogen atom, halogen atom and protector hydroxyl group;

B = chlorine or bromine atom; and

1 = asymmetric carbon atom.

INDEPENDENT CLAIMS are included for the following:

(1) a recombinant vector (III) in which (I) is connected;

(2) a transformed cell (IV) produced by introducing (I) into a host cell in order to transform it;

(3) (II) having physicochemical properties such as (a), (b), (c) and (d) as mentioned above, and has (S1) or (S1) in which one or more amino acids as substituted, deleted, or inserted, where (II) is encoded by (I);

(4) producing (M1) (II), comprising:

(a) **culturing** any one of **microorganisms** belonging to Rhodotorula genus capable of **producing** (II); or

(b) **culturing** (IV) in a **culture** medium and collecting (II) from the **culture**; and

(5) producing (M2) compound of general formula (1), comprising contacting a compound having general formula (2) with microbial cell containing (II), oxygen containing extract of the microbial cells, (II), or (IV) in the presence of endogenous or added **NADPH** to perform asymmetric reduction to produce compound having general formula (1).

USE - (I) is useful for producing industrial optically active 2-halo-1-(substituted-3-nitrophenyl) ethanol by asymmetric reduction of 2-halo-1-(substituted-3-nitrophenyl) ethanone.

ADVANTAGE - Optically active 2-halo-1-(substituted-3-nitrophenyl) ethanol can be efficiently manufactured with optical purity of more than 99.9 % using (I).

Dwg.0/1

L17 ANSWER 6 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER: 2003-505292 [47] WPIDS
DOC. NO. CPI: C2003-135129
TITLE: New polypeptides derived from 6-phosphogluconate dehydrogenase of Corynebacterium glutamicum used for increasing yield in fermentative production of useful substances e.g. L-amino acids.
DERWENT CLASS: B05 D16 E19
INVENTOR(S): IKEDA, M; MITSUHASHI, S; OCHIAI, K; OHNISHI, J
PATENT ASSIGNEE(S): (KYOW) KYOWA HAKKO KOGYO KK; (IKED-I) IKEDA M; (MITS-I) MITSUHASHI S; (OCHI-I) OCHIAI K; (OHNI-I) OHNISHI J
COUNTRY COUNT: 102
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2003048351	A1	20030612	(200347)*	JA	66
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SI SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW					
AU 2002349753	A1	20030617	(200419)		
EP 1462516	A1	20040929	(200463)	EN	
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR					
US 2005079586	A1	20050414	(200526)		
JP 2003549530	X	20050414	(200527)		45

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003048351	A1	WO 2002-JP12661	20021203
AU 2002349753	A1	AU 2002-349753	20021203
EP 1462516	A1	EP 2002-781875	20021203
		WO 2002-JP12661	20021203
US 2005079586	A1	WO 2002-JP12661	20021203
		US 2004-497502	20040603
JP 2003549530	X	WO 2002-JP12661	20021203
		JP 2003-549530	20021203

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2002349753	A1	Based on	WO 2003048351
EP 1462516	A1	Based on	WO 2003048351
JP 2003549530	X	Based on	WO 2003048351

PRIORITY APPLN. INFO: JP 2001-368264 20011203
AN 2003-505292 [47] WPIDS
AB WO2003048351 A UPAB: 20030723
NOVELTY - New polypeptides (I) have 6-phosphogluconate dehydrogenase (GND) activity and are derived from the GND of Corynebacterium glutamicum (ATCC-13032) by replacement of the proline residue at position 158 and/or the serine residue at position 361 by another

amino acid residue. Amino acid residues may also be added, deleted and/or substituted at other positions in the sequence.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) **DNA** encoding (I);

(2) Expression vectors containing the **DNA**;

(3) Hosts transformed by the vectors;

(4) Microorganisms having **DNA** encoding (I) incorporated into chromosome **DNA**;

(5) **Preparation** of useful substances by **culture** of the transformed hosts or **microorganisms**.

USE - Used for more efficient fermentative production of L-amino acids (such as L-**lysine**, L-**threonine**, L-**isoleucine**, L-arginine, L-phenylalanine, L-tyrosine or L-tryptophan), **nucleic** acids, **sugars** and vitamins.

Dwg.0/0

L17 ANSWER 7 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER: 2003-289876 [28] WPIDS

DOC. NO. CPI: C2005-217451

TITLE: New **culture** medium comprising biosynthetic building blocks and other organic molecules, useful for growing fastidious microorganisms, or for **culturing** microorganisms for vaccine, antigen and metabolite production.

DERWENT CLASS: B04 D16

INVENTOR(S): BREITSCHWERDT, E B; SONTAKKE, S

PATENT ASSIGNEE(S): (UYNC-N) UNIV NORTH CAROLINA STATE; (BREI-I) BREITSCHWERDT E B; (SONT-I) SONTAKKE S

COUNTRY COUNT: 100

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2003012058	A2	20030213	(200328)*	EN	28
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW					
US 2003148499	A1	20030807	(200358)		
AU 2002332438	A1	20030217	(200452)		
AU 2002332438	A8	20051020	(200615)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003012058	A2	WO 2002-US24329	20020731
US 2003148499	A1 Provisional	US 2001-309688P	20010802
		US 2002-208352	20020730
AU 2002332438	A1	AU 2002-332438	20020731
AU 2002332438	A8	AU 2002-332438	20020731

FILING DETAILS:

PATENT NO	KIND	PATENT NO

AU 2002332438 A1 Based on WO 2003012058
AU 2002332438 A8 Based on WO 2003012058

PRIORITY APPLN. INFO: US 2001-309688P 20010802; US 2002-208352 20020730

AN 2003-289876 [28] WPIDS

AB WO2003012058 A UPAB: 20051117
NOVELTY - A new **culture** medium for growing a fastidious microorganism comprising biosynthetic building blocks and other organic molecules to support the growth of the fastidious microorganism in **culture**, is new.
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:
(1) **culturing** a fastidious microorganism by **culturing** a sample containing a fastidious microorganism in a **culture** medium defined above;
(2) detecting or identifying a fastidious microorganism in a sample;
(3) identifying a compound that binds to a microorganism;
(4) diagnosing a mammalian subject with an infection by a fastidious microorganism; and
(5) diagnosing a disorder in a subject.
USE - The new **culture** medium is useful for growing fastidious microorganisms, which may not be **cultured** with currently available media; growing, identifying, isolating and/or detecting microorganisms associated with disease; and **culturing** microorganisms for vaccine, antigen and metabolite production.
Dwg.0/0

L17 ANSWER 8 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 2003-248018 [24] WPIDS
CROSS REFERENCE: 2003-247821 [24]; 2003-247822 [24]; 2003-248014 [24]; 2003-256370 [25]; 2003-256371 [25]; 2003-256372 [25]
DOC. NO. CPI: C2003-063878
TITLE: **Preparing** L-amino acids, e.g. L-**threonine**, by fermenting **microorganisms** of Enterobacteriaceae family in which the aceK gene is attenuated, in particular eliminated, and isolating L-amino acid from **culture** medium.
DERWENT CLASS: B05 D13 D16 E16
INVENTOR(S): HERMANN, T
PATENT ASSIGNEE(S): (DEGS) DEGUSSA AG
COUNTRY COUNT: 100
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2003008616	A2	20030130	(200324)*	EN	37
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW					
AU 2002319280	A1	20030303	(200452)		
US 2005124047	A1	20050609	(200539)		

AU 2002319280 A8 20051013 (200616)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003008616	A2	WO 2002-EP7353	20020703
AU 2002319280	A1	AU 2002-319280	20020703
US 2005124047	A1 Provisional	US 2001-306867P	20010723
		WO 2002-EP7353	20020703
		US 2004-483413	20040120
AU 2002319280	A8	AU 2002-319280	20020703

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2002319280	A1 Based on	WO 2003008616
AU 2002319280	A8 Based on	WO 2003008616

PRIORITY APPLN. INFO: US 2001-306867P 20010723; DE 2001-10135051 20010718

AN 2003-248018 [24] WPIDS

CR 2003-247821 [24]; 2003-247822 [24]; 2003-248014 [24]; 2003-256370 [25]; 2003-256371 [25]; 2003-256372 [25]

AB WO2003008616 A UPAB: 20060308

NOVELTY - **Preparing** (M) L-amino acids involves fermenting **microorganisms** of Enterobacteriaceae family which **produce** the desired L-amino acid and in which the aceK gene (isocitrate dehydrogenase kinase/phosphatase gene), or nucleotide sequence which codes for it is attenuated, concentrating desired L-amino acid in the medium or in the cells of the microorganisms, and isolating desired L-amino acid.

DETAILED DESCRIPTION - **Preparing** (M) L-amino acids, in particular L-**threonine**, involves fermenting **microorganisms** of the Enterobacteriaceae family which **produce** the desired L-amino acid, and in which the aceK gene, or the nucleotide sequence which codes for it is attenuated, in particular eliminated, concentrating the desired L-amino acid in the medium or in the cells of the microorganisms, and isolating the desired L-amino acid, constituents of the fermentation broth and/or the biomass in its entirety or its portions (greater than 0 to 100%) optionally remaining in the product.

USE - (M) is useful for preparing L-amino acids e.g., L-**threonine** (claimed). (M) is useful for the fermentative preparation of L-amino acids (such as L-**threonine**, L-**isoleucine**, L-valine, L-**methionine**, L-homoserine and L-**lysine**) which are useful in human medicine and in the pharmaceuticals industry, in the foodstuffs industry and very particularly in animal nutrition.

DESCRIPTION OF DRAWING(S) - The figure shows the plasmid pMAK705 Delta aceK.

Dwg.1/1

L17 ANSWER 9 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER: 2003-256376 [25] WPIDS

CROSS REFERENCE: 2003-239344 [23]; 2003-239345 [23]; 2003-248015 [24]; 2003-248016 [24]; 2003-248017 [24]; 2003-256373 [25]; 2003-256374 [25]; 2003-256375 [25]; 2003-256377 [25];

2003-289779 [28]
DOC. NO. CPI: C2003-066425
TITLE: **Preparing** L-amino acids, especially L-**threonine**, by fermenting **microorganisms** of Enterobacteriaceae family in which rseA, rseC genes are enhanced, preferably over-expressed and isolating amino acid from **culture** medium.
DERWENT CLASS: B05 D16 E16
INVENTOR(S): RIEPING, M
PATENT ASSIGNEE(S): (DEGS) DEGUSSA AG; (RIEP-I) RIEPING M
COUNTRY COUNT: 101
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2003008612	A2	20030130	(200325)*	EN	33
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW					
EP 1407022	A2	20040414	(200426)	EN	
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR					
AU 2002345083	A1	20030303	(200452)		
US 2004241814	A1	20041202	(200480)		
AU 2002345083	A8	20051020	(200615)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003008612	A2	WO 2002-EP7370	20020703
EP 1407022	A2	EP 2002-743258	20020703
		WO 2002-EP7370	20020703
AU 2002345083	A1	AU 2002-345083	20020703
US 2004241814	A1	WO 2002-EP7370	20020703
		US 2004-483417	20040120
AU 2002345083	A8	AU 2002-345083	20020703

FILING DETAILS:

PATENT NO	KIND		PATENT NO
EP 1407022	A2	Based on	WO 2003008612
AU 2002345083	A1	Based on	WO 2003008612
AU 2002345083	A8	Based on	WO 2003008612

PRIORITY APPLN. INFO: US 2001-306869P 20010723; DE 2001-10135053 20010718
AN 2003-256376 [25] WPIDS
CR 2003-239344 [23]; 2003-239345 [23]; 2003-248015 [24]; 2003-248016 [24]; 2003-248017 [24]; 2003-256373 [25]; 2003-256374 [25]; 2003-256375 [25]; 2003-256377 [25]; 2003-289779 [28]
AB WO2003008612 A UPAB: 20060302
NOVELTY - **Preparing** (M) L-amino acids, e.g. L-

threonine, comprising fermenting **microorganisms** of the Enterobacteriaceae family which **produce** the desired L-amino acid and in which the rseA and rseC genes (genes of the rseABC operon coding for membrane protein with anti- approx. sE activity and global regulator of approx. sE factor, respectively), or the nucleotide sequence which codes for these, is/are enhanced, in particular over-expressed, is new.

DETAILED DESCRIPTION - (M) involves fermenting **microorganisms** of the Enterobacteriaceae family which **produce** the desired L-amino acid and in which the rseA and rseC genes, or the nucleotide sequence which codes for these, is enhanced, in particular over-expressed, concentrating the desired L-amino acid in the medium or in the cells of the microorganisms and isolating the desired L-amino acid, constituents of the fermentation broth and/or the biomass in its entirety or portions, optionally remaining in the product.

USE - (M) is useful for preparing L-amino acids, in particular L-**threonine** (claimed) and also L-**isoleucine**, L-valine, L-**methionine**, L-homoserine and L-**lysine**. L-amino acids, in particular L-**threonine** are used in human medicine and in pharmaceutical industry, in the foodstuffs industry and more particularly in animal nutrition.

DESCRIPTION OF DRAWING(S) - The figure shows the map of the plasmid pTrc99ArseA containing the rseA gene.

Dwg.1/2

L17 ANSWER 10 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER: 2003-248016 [24] WPIDS

CROSS REFERENCE: 2003-239344 [23]; 2003-239345 [23]; 2003-247824 [24]; 2003-247825 [24]; 2003-248015 [24]; 2003-248017 [24]; 2003-256373 [25]; 2003-256374 [25]; 2003-256375 [25]; 2003-256376 [25]; 2003-256377 [25]; 2003-289779 [28]

DOC. NO. CPI: C2003-063876

TITLE: **Preparing** L-amino acids, e.g. L-**threonine**, by fermenting **microorganisms** of Enterobacteriaceae family in which talB gene is enhanced, preferably over-expressed, and isolating L-amino acid from the **culture** medium.

DERWENT CLASS: B05 D13 D16 E16

INVENTOR(S): RIEPING, M

PATENT ASSIGNEE(S): (DEGS) DEGUSSA AG

COUNTRY COUNT: 100

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2003008611	A2	20030130	(200324)*	EN	29
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW					
AU 2002325865	A1	20030303	(200452)		
AU 2002325865	A8	20051020	(200615)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003008611	A2	WO 2002-EP7369	20020703
AU 2002325865	A1	AU 2002-325865	20020703
AU 2002325865	A8	AU 2002-325865	20020703

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2002325865	A1 Based on	WO 2003008611
AU 2002325865	A8 Based on	WO 2003008611

PRIORITY APPLN. INFO: US 2001-306869P 20010723; DE 2001-10135053 20010718

AN 2003-248016 [24] WPIDS

CR 2003-239344 [23]; 2003-239345 [23]; 2003-247824 [24]; 2003-247825 [24]; 2003-248015 [24]; 2003-248017 [24]; 2003-256373 [25]; 2003-256374 [25]; 2003-256375 [25]; 2003-256376 [25]; 2003-256377 [25]; 2003-289779 [28]

AB WO2003008611 A UPAB: 20060302

NOVELTY - **Preparing** (M) L-amino acids involves fermenting **microorganisms** of Enterobacteriaceae family which **produce** desired L-amino acid and in which the talB gene (transaldolase B gene) or nucleotide sequence which codes for it, is enhanced, preferably over-expressed, concentrating desired L-amino acid in the medium or in cells of the microorganisms, and isolating L-amino acid.

DETAILED DESCRIPTION - **Preparing** (M) L-amino acids, in particular L-**threonine**, involves fermenting **microorganisms** of the Enterobacteriaceae family which **produce** the desired L-amino acid, and in which at least the talB gene, or the nucleotide sequence which codes for it, is enhanced, in particular over-expressed, concentrating the desired L-amino acid in the medium or in the cells of the microorganisms, and isolating the desired L-amino acid, constituents of the fermentation broth and/or the biomass in its entirety or its portions (greater than 0 to 100%) optionally remaining in the product.

USE - (M) is useful for preparing L-amino acids e.g., L-**threonine** (claimed). (M) is useful for the fermentative preparation of L-amino acids (such as L-**threonine**, L-**isoleucine**, L-valine, L-**methionine**, L-homoserine and L-**lysine**) which are useful in human medicine and in the pharmaceuticals industry, in the foodstuffs industry and very particularly in animal nutrition.

DESCRIPTION OF DRAWING(S) - The figure shows map of the plasmid pTrc99AtalB containing the talB gene.

Dwg.1/1

L17 ANSWER 11 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER: 2003-239344 [23] WPIDS

CROSS REFERENCE: 2003-239345 [23]; 2003-247824 [24]; 2003-247825 [24]; 2003-248015 [24]; 2003-248016 [24]; 2003-248017 [24]; 2003-256373 [25]; 2003-256374 [25]; 2003-256375 [25]; 2003-256376 [25]; 2003-256377 [25]; 2003-289779 [28]

DOC. NO. CPI: C2003-061443

TITLE: **Preparing** L-amino acids, e.g. L-**threonine**, by fermenting

microorganisms of Enterobacteriaceae family in which pfkB gene is enhanced, preferably over-expressed, and isolating L-amino acid from the **culture** medium.

DERWENT CLASS: B05 D16 E16
INVENTOR(S): RIEPING, M
PATENT ASSIGNEE(S): (DEGS) DEGUSSA AG
COUNTRY COUNT: 100
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2003008610	A2	20030130	(200323)*	EN	29
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW					
AU 2002321165	A1	20030303	(200452)		
AU 2002321165	A8	20051020	(200615)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003008610	A2	WO 2002-EP7368	20020703
AU 2002321165	A1	AU 2002-321165	20020703
AU 2002321165	A8	AU 2002-321165	20020703

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2002321165	A1	Based on	WO 2003008610
AU 2002321165	A8	Based on	WO 2003008610

PRIORITY APPLN. INFO: US 2001-306869P 20010723; DE 2001-10135053 20010718

AN 2003-239344 [23] WPIDS

CR 2003-239345 [23]; 2003-247824 [24]; 2003-247825 [24]; 2003-248015 [24]; 2003-248016 [24]; 2003-248017 [24]; 2003-256373 [25]; 2003-256374 [25]; 2003-256375 [25]; 2003-256376 [25]; 2003-256377 [25]; 2003-289779 [28]

AB WO2003008610 A UPAB: 20060302

NOVELTY - **Preparing** (M) L-amino acids e.g. L-**threonine**, comprising fermenting **microorganisms** of the Enterobacteriaceae family which **produce** the desired L-amino acid and in which at least the pfkB gene (6-phosphofructokinase isoenzyme 2 gene), or the nucleotide sequence which codes for it, is enhanced, in particular over-expressed, is new.

DETAILED DESCRIPTION - Preparing (M) L-amino acids, in particular L-**threonine**, comprising:

(a) fermenting **microorganisms** of the Enterobacteriaceae family which **produce** the desired L-amino acid, and in which at least the pfkB gene, or the nucleotide sequence which codes for it, is enhanced, in particular over-expressed;

(b) concentrating the desired L-amino acid in the medium or in

the cells of the microorganisms; and

(c) isolating the desired L-amino acid, constituents of the fermentation broth and/or the biomass in its entirety or its portions, optionally remaining in the product.

USE - (M) is useful for preparing L-amino acids e.g. L-**threonine** (claimed). (M) is useful for the fermentative preparation of L-amino acids (such as L-**threonine**, L-**isoleucine**, L-valine, L-**methionine**, L-homoserine and L-**lysine**) which are useful in human medicine and in the pharmaceuticals industry, in the foodstuffs industry and very particularly in animal nutrition.

DESCRIPTION OF DRAWING(S) - The drawing shows map of the plasmid pTrc99ApfkB containing the pfkB gene.

Dwg.1/1

L17 ANSWER 12 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER: 2003-248015 [24] WPIDS

CROSS REFERENCE: 2003-239344 [23]; 2003-239345 [23]; 2003-247824 [24]; 2003-247825 [24]; 2003-248016 [24]; 2003-248017 [24]; 2003-256373 [25]; 2003-256374 [25]; 2003-256375 [25]; 2003-256376 [25]; 2003-256377 [25]; 2003-289779 [28]

DOC. NO. CPI: C2003-063875

TITLE: **Preparing** L-amino acids, e.g. L-**threonine**, by fermenting **microorganisms** of Enterobacteriaceae family in which phoB and/or phoR genes are enhanced, preferably over-expressed, isolating L-amino acid from **culture** medium.

DERWENT CLASS: B05 D13 D16 E16

INVENTOR(S): RIEPING, M

PATENT ASSIGNEE(S): (DEGS) DEGUSSA AG

COUNTRY COUNT: 101

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2003008606	A2	20030130	(200324)*	EN	29
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW					
EP 1407026	A2	20040414	(200426)	EN	
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR					
AU 2002354852	A1	20030303	(200452)		
AU 2002354852	A8	20051020	(200615)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003008606	A2	WO 2002-EP7355	20020703
EP 1407026	A2	EP 2002-787110	20020703
		WO 2002-EP7355	20020703
AU 2002354852	A1	AU 2002-354852	20020703
AU 2002354852	A8	AU 2002-354852	20020703

FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 1407026	A2 Based on	WO 2003008606
AU 2002354852	A1 Based on	WO 2003008606
AU 2002354852	A8 Based on	WO 2003008606

PRIORITY APPLN. INFO: US 2001-306869P 20010723; DE 2001-10135053 20010718

AN 2003-248015 [24] WPIDS

CR 2003-239344 [23]; 2003-239345 [23]; 2003-247824 [24]; 2003-247825 [24]; 2003-248016 [24]; 2003-248017 [24]; 2003-256373 [25]; 2003-256374 [25]; 2003-256375 [25]; 2003-256376 [25]; 2003-256377 [25]; 2003-289779 [28]

AB WO2003008606 A UPAB: 20060302

NOVELTY - **Preparing** (M) L-amino acids e.g., L-**threonine**, involves fermenting **microorganisms** of the Enterobacteriaceae family which **produce** the desired L-amino acid and in which one or more of the genes chosen from phoB (gene coding for regulatory protein of the pho regulon) and phoR (gene coding for sensor protein of the pho regulon), or the nucleotide sequences which code for these, is/are enhanced.

DETAILED DESCRIPTION - **Preparing** (M) L-amino acids, in particular L-**threonine**, involves fermenting **microorganisms** of the Enterobacteriaceae family which **produce** the desired L-amino acid, and in which one or more of the genes chosen from phoB and phoR, or nucleotide sequences which code for these is/are enhanced, in particular over-expressed, concentrating the desired L-amino acid in the medium or in the cells of the microorganisms, and isolating the desired L-amino acid, constituents of the fermentation broth and/or the biomass in its entirety or its portions (greater than 0 to 100%) optionally remaining in the product.

USE - (M) is useful for preparing L-amino acids e.g., L-**threonine** (claimed). (M) is useful for the fermentative preparation of L-amino acids (such as L-**threonine**, L-**isoleucine**, L-valine, L-**methionine**, L-homoserine and L-**lysine**) which are useful in human medicine and in the pharmaceuticals industry, in the foodstuffs industry and very particularly in animal nutrition.

DESCRIPTION OF DRAWING(S) - The figure shows map of the plasmid pTrc99AphoBR containing the phoB and phoR genes.

Dwg.1/1

L17 ANSWER 13 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER: 2003-248014 [24] WPIDS

CROSS REFERENCE: 2003-247821 [24]; 2003-247822 [24]; 2003-248018 [24]; 2003-256370 [25]; 2003-256371 [25]; 2003-256372 [25]

DOC. NO. CPI: C2003-063874

TITLE: **Preparing** L-amino acids, e.g. L-**threonine**, by fermenting **microorganisms** of Enterobacteriaceae family in which the aceB gene is attenuated, in particular eliminated, and isolating L-amino acid from **culture** medium.

DERWENT CLASS: B05 D13 D16 E16

INVENTOR(S): HERMANN, T

PATENT ASSIGNEE(S): (DEGS) DEGUSSA AG
COUNTRY COUNT: 100
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2003008604	A2	20030130	(200324)*	EN	36
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW					
AU 2002354851	A1	20030303	(200452)		
CN 1533439	A	20040929	(200504)		
US 2005221448	A1	20051006	(200566)		
AU 2002354851	A8	20051020	(200615)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003008604	A2	WO 2002-EP7352	20020703
AU 2002354851	A1	AU 2002-354851	20020703
CN 1533439	A	CN 2002-814498	20020703
US 2005221448	A1 Provisional	US 2001-306867P	20010723
		WO 2002-EP7352	20020703
		US 2004-483983	20040122
AU 2002354851	A8	AU 2002-354851	20020703

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2002354851	A1 Based on	WO 2003008604
AU 2002354851	A8 Based on	WO 2003008604

PRIORITY APPLN. INFO: US 2001-306867P 20010723; DE 2001-10135051 20010718

AN 2003-248014 [24] WPIDS

CR 2003-247821 [24]; 2003-247822 [24]; 2003-248018 [24]; 2003-256370 [25]; 2003-256371 [25]; 2003-256372 [25]

AB WO2003008604 A UPAB: 20060302

NOVELTY - **Preparing** (M) L-amino acids involves fermenting **microorganisms** of Enterobacteriaceae family which **produce** the desired L-amino acid in which the aceB gene (malate synthase A gene) or the nucleotide sequence which codes for it is attenuated, preferably eliminated, concentrating the desired L-amino acid in the medium or in cells of the microorganisms, and isolating L-amino acid.

DETAILED DESCRIPTION - **Preparing** (M) L-amino acids, in particular L-**threonine**, involves fermenting **microorganisms** of the Enterobacteriaceae family which **produce** the desired L-amino acid, and in which the aceB gene, or the nucleotide sequence which codes for it is attenuated, in particular eliminated, concentrating the desired L-amino acid in the medium or in the cells of the microorganisms, and isolating the desired L-amino acid, constituents of the fermentation broth and/or

the biomass in its entirety or its portions (greater than 0 to 100%) optionally remaining in the product.

USE - (M) is useful for preparing L-amino acids e.g., L-**threonine** (claimed). (M) is useful for the fermentative preparation of L-amino acids (such as L-**threonine**, L-**isoleucine**, L-valine, L-**methionine**, L-homoserine and L-**lysine**) which are useful in human medicine and in the pharmaceuticals industry, in the foodstuffs industry and very particularly in animal nutrition.

DESCRIPTION OF DRAWING(S) - The figure shows the plasmid pMAK705 Delta aceB.

Dwg.1/1

L17 ANSWER 14 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 2003-256371 [25] WPIDS
CROSS REFERENCE: 2003-248014 [24]; 2003-248018 [24]; 2003-256370 [25]; 2003-256372 [25]
DOC. NO. CPI: C2003-066420
TITLE: **Preparing** L-amino acids, in particular L-**threonine**, by fermenting **microorganisms** of Enterobacteriaceae family in which ugpB gene is attenuated, in particular eliminated and isolating L-amino acid from **culture** medium.
DERWENT CLASS: B05 D16 E16
INVENTOR(S): HERMANN, T
PATENT ASSIGNEE(S): (DEGS) DEGUSSA AG
COUNTRY COUNT: 101
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2003008602	A2	20030130	(200325)*	EN	35
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW					
EP 1407021	A2	20040414	(200426)	EN	
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR					
AU 2002314203	A1	20030303	(200452)		
AU 2002314203	A8	20051013	(200616)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003008602	A2	WO 2002-EP7350	20020703
EP 1407021	A2	EP 2002-740760	20020703
		WO 2002-EP7350	20020703
AU 2002314203	A1	AU 2002-314203	20020703
AU 2002314203	A8	AU 2002-314203	20020703

FILING DETAILS:

PATENT NO	KIND	PATENT NO

EP 1407021	A2 Based on	WO 2003008602
AU 2002314203	A1 Based on	WO 2003008602
AU 2002314203	A8 Based on	WO 2003008602

PRIORITY APPLN. INFO: US 2001-306867P 20010723; DE 2001-10135051 20010718

AN 2003-256371 [25] WPIDS

CR 2003-248014 [24]; 2003-248018 [24]; 2003-256370 [25]; 2003-256372 [25]

AB WO2003008602 A UPAB: 20060308

NOVELTY - **Preparing** (M) L-amino acids, in particular L-**threonine**, comprises fermenting **microorganisms** of the Enterobacteriaceae family which **produce** the desired L-amino acid and in which the ugpB gene (coding for periplasmic binding protein of the sn-glycerol 3-phosphate transport system), or the nucleotide sequence which codes for this, is attenuated, concentrating the desired L-amino acid and isolating the desired L-amino acid.

DETAILED DESCRIPTION - (M) involves fermenting **microorganisms** of the Enterobacteriaceae family which **produce** the desired L-amino acid and in which the ugpB gene, or the nucleotide sequence which codes for this, is attenuated, in particular eliminated, concentrating the desired L-amino acid in the medium or in the cells of the microorganisms and isolating the desired L-amino acid, constituents of the fermentation broth and/or the biomass in its entirety or portions, optionally remaining in the product.

USE - (M) is useful for preparing L-amino acids, in particular L-**threonine** (claimed) and also L-**isoleucine**, L-valine, L-**methionine**, L-homoserine and L-**lysine**. L-amino acids, in particular L-**threonine** are used in human medicine and in pharmaceutical industry, in the foodstuffs industry and more particularly in animal nutrition.

DESCRIPTION OF DRAWING(S) - The figure shows the map of the plasmid pMAK705 Delta ugpB containing the ugpB gene.

Dwg.1/1

L17 ANSWER 15 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER: 2003-229411 [22] WPIDS

DOC. NO. CPI: C2003-058966

TITLE: Method for modifying coenzyme-dependency of oxidoreductase to provide novel carbonyl reductase variants utilizing NADH instead of **NADPH**, applicable e.g. in synthesis of optically-pure alcohols.

DERWENT CLASS: B04 D16

INVENTOR(S): KIZAKI, N; MORIKAWA, S; NAKAI, T; YASOHARA, Y

PATENT ASSIGNEE(S): (KANF) KANEKA CORP; (KIZA-I) KIZAKI N; (MORI-I) MORIKAWA S; (NAKA-I) NAKAI T; (YASO-I) YASOHARA Y

COUNTRY COUNT: 101

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2003004653	A1	20030116	(200322)*	JA	59

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG

KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM
PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ
VN YU ZA ZM ZW
EP 1416050 A1 20040506 (200430) EN
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV
MC MK NL PT RO SE SI SK TR
KR 2004014655 A 20040214 (200439)
AU 2002313321 A1 20030121 (200452)
JP 2003510811 X 20041028 (200471)
US 2004248250 A1 20041209 (200481)
MX 2003011813 A1 20040701 (200545)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003004653	A1	WO 2002-JP6688	20020702
EP 1416050	A1	EP 2002-738904	20020702
		WO 2002-JP6688	20020702
KR 2004014655	A	KR 2004-700031	20040102
AU 2002313321	A1	AU 2002-313321	20020702
JP 2003510811	X	WO 2002-JP6688	20020702
		JP 2003-510811	20020702
US 2004248250	A1	WO 2002-JP6688	20020702
		US 2004-482697	20040624
MX 2003011813	A1	WO 2002-JP6688	20020702
		MX 2003-11813	20031217

FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 1416050	A1 Based on	WO 2003004653
AU 2002313321	A1 Based on	WO 2003004653
JP 2003510811	X Based on	WO 2003004653
MX 2003011813	A1 Based on	WO 2003004653

PRIORITY APPLN. INFO: JP 2002-6303 20020115; JP 2001-200417 20010702

AN 2003-229411 [22] WPIDS

AB WO2003004653 A UPAB: 20030402

NOVELTY - A method for modifying an enzyme whereby the coenzyme-dependency of an oxidoreductase is changed by controlling the size of binding energy of the coenzyme through substitution, insertion or deletion or 1 or more amino acid residues in a pre-selected part of the oxidoreductase, or their combination.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) oxidoreductase variants thus modified;

(2) carbonyl reductase variants in which their coenzyme-dependency is changed by the enzyme-modification method;

(3) carbonyl reductase variants in which the parents have been modified by substitution, insertion or deletion of some amino acid residues or their combination, and having physiochemical properties of (a) using the reduced form beta -nicotinamide adenine dinucleotide as coenzyme for acting on a 4-chloroacetoacetic acid ester to give an (S)-4-chloro-3-hydroxybutyric acid ester; (b) exhibiting potent activity on a 4-chloroacetoacetic acid ester and practically not on acetoacetic acid ester, and without substantial dehydrogenase activity

on a 4-halo-3-hydroxybutyric acid ester; and (c) exhibiting potent activity when applying the reduced form beta -nicotinamide adenine dinucleotide but without substantial activity when using the reduced form beta -**nicotinamide adenine** dinucleotide **phosphate** as coenzyme;

(4) **DNAs** encoding the enzyme variants;

(5) plasmids containing the **DNAs**;

(6) transformant cells which are transformed by the plasmids;

(7) producing the carbonyl reductase variant by **culturing** and growing the transformant cells;

(8) a process for producing an (S)-4-chloro-3-hydroxybutyric acid ester of formula (I) by reaction a 4-haloacetoacetic acid ester with the enzyme variant, or the **culture** of a **microorganism** capable of **producing** such enzyme variant or its processed material; and (I) and (II)

(9) producing an optically-active alcohol by reacting a carbonyl compound with any of the enzyme variants and an enzyme capable of regenerating the enzyme variant-dependent coenzyme and/or its variant, followed by collecting the product; or by reacting a carbonyl compound with transformant cells which are transformed with a plasmid containing a **DNA** encoding any of the enzyme variant and a **DNA** encoding an enzyme capable of regenerating the enzyme variant-dependent coenzyme, and collecting the produced optically-active alcohol.

R1 = halo

R2 = H

R3 = (un)substituted alkyl or aryl.

USE - The method is for modifying coenzyme-dependency of oxidoreductase to provide novel carbonyl reductase variants utilizing NADH instead of **NADPH**, applicable e.g. in synthesis of optically-pure alcohols, particularly (S)-4-chloro-3-hydroxybutyric acid esters (claimed) for use as pharmaceutical intermediates.

ADVANTAGE - The enzymes obtained by converting the coenzyme-dependency from **NADPH** to NADH to enable its asymmetric reduction of carbonyl compounds.

Dwg.0/7

L17 ANSWER 16 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 2004-102272 [11] WPIDS
DOC. NO. CPI: C2004-042074
TITLE: Novel heat-stable **lysine** dehydrogenase useful for measuring **lysine**, catalyzes dehydrogenation of L-**lysine** in presence of NAD and water, and has substrate specificity for L-**lysine** and S-(beta-aminoethyl)L-**cysteine**.
DERWENT CLASS: A96 B04 D16
PATENT ASSIGNEE(S): (NIRA) UNITIKA LTD
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 2003061681	A	20030304	(200411)*		12

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE

JP 2003061681 A JP 2001-261402 20010830

PRIORITY APPLN. INFO: JP 2001-261402 20010830
AN 2004-102272 [11] WPIDS
AB JP2003061681 A UPAB: 20040213
NOVELTY - Heat-stable **lysine** dehydrogenase (I) which catalyzes the reaction of L-**lysine**, NAD and water to produce NADH, and has substrate specificity for L-**lysine** and S-(beta -aminoethyl)L- **cysteine** and does not react with other 19 L-amino acids, D-**lysine** and L-ornithine, is new. When NAD is used as coenzyme, the reactivity of the enzyme is 100%, and for **NADP**, the reactivity is 45 %.

DETAILED DESCRIPTION - Heat-stable **lysine** dehydrogenase (I) catalyzes the reaction of L- **lysine**, NAD and water to produce NADH, and has substrate specificity for L-**lysine** and S-(beta -aminoethyl)L-**cysteine** and does not react with other 19 L-amino acids, D-**lysine** and L-ornithine. When NAD is used as coenzyme, the reactivity of the enzyme is 100%, and for **NADP**, the reactivity is 45%. The optimum pH for oxidative deamination reaction is 10.1 and the temperature of the enzyme for oxidative deamination reaction is 70 deg. C. The activity of the enzyme is not reduced even after processing for 10 minutes at 60 deg. C, and even for 10 minutes at 65 deg. C in the presence of 5 mM L-**lysine**. The molecular weight of (I) calculated by polyacrylamide gel electrophoresis (PAGE) is 250000-260000, and the molecular weight of the subunit of (I) calculated by sodium dodecyl sulfate (SDS)-PAGE is 43000.

INDEPENDENT CLAIMS are also included for the following:

(1) producing (I);

(2) a gene (II) encoding (I) which comprises a 375 amino acid sequence (S1), given in the specification, or S1 including deletion, substitution or addition of one or more amino acids, where the gene comprises a 1158 nucleotide sequence (S2), given in the specification or S2 comprising deletion, substitution or addition of one or more bases;

(3) a recombinant vector (III) comprising (II); and

(4) a transformed host cell (IV) comprising (III).

USE - (I) is useful in quantitative assays for measuring **lysine**.

ADVANTAGE - (I) is stable even at 65 deg. C, and the activity of the enzyme is maintained.

Dwg.0/4

L17 ANSWER 17 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 2003-506564 [48] WPIDS
DOC. NO. CPI: C2003-135586
TITLE: Production of non-aromatic amino acids, useful e.g. in animal nutrition, comprises a fermentative process involving the **culture** and utilization of microorganisms in which activity of the CsrA gene is increased.
DERWENT CLASS: B05 D13 D16 E16
INVENTOR(S): RIEPING, M
PATENT ASSIGNEE(S): (DEGS) DEGUSSA AG
COUNTRY COUNT: 102
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG

DE 10157721 A1 20030605 (200348)* 6
WO 2003046184 A1 20030605 (200348) EN
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW
AU 2002342763 A1 20030610 (200419)
EP 1448778 A1 20040825 (200456) EN
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 10157721	A1	DE 2001-10157721	20011124
WO 2003046184	A1	WO 2002-EP10792	20020926
AU 2002342763	A1	AU 2002-342763	20020926
EP 1448778	A1	EP 2002-779424	20020926
		WO 2002-EP10792	20020926

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2002342763	A1 Based on	WO 2003046184
EP 1448778	A1 Based on	WO 2003046184

PRIORITY APPLN. INFO: DE 2001-10157721 20011124
AN 2003-506564 [48] WPIDS
AB DE 10157721 A UPAB: 20030729
NOVELTY - Fermentative production of non-aromatic amino acids (I), especially L-**threonine**, comprises **culturing** a (I)-**producing microorganism** of the family Enterobacteriaceae in which the activity of the protein encoded by the CsrA (carbon storage regulator A) gene is increased, especially by over-expression.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for microorganisms of the family Enterobacteriaceae, especially the genus Escherichia, in which activity of the protein encoded by the CsrA (carbon storage regulator A) gene is increased, especially by over-expression.

USE - Amino acids (I), especially L-**threonine**, are useful in human medicine, pharmaceuticals and the food industry, but particularly in animal nutrition.

ADVANTAGE - Increasing the activity of CsrA improves production of amino acids (I).

Dwg.0/0

L17 ANSWER 18 OF 25 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 2004:167249 BIOSIS
DOCUMENT NUMBER: PREV200400161544
TITLE: In vivo application of glucose-oxidase containing liposomes: Distribution and effect in the animal model

for chronic granulomatous disease.

AUTHOR(S): Gerber, Claudia E. [Reprint Author]; Kimpfler, Andrea; Schubert, Rolf; Bruchelt, Gernot [Reprint Author]; Niethammer, Dietrich [Reprint Author]; Dianuer, Mary C.

CORPORATE SOURCE: Dept. of Hematology and Oncology, University Children's Hospital, Tuebingen, Germany

SOURCE: Blood, (November 16 2003) Vol. 102, No. 11, pp. 49b-50b. print.
Meeting Info.: 45th Annual Meeting of the American Society of Hematology. San Diego, CA, USA. December 06-09, 2003. American Society of Hematology.
CODEN: BLOOAW. ISSN: 0006-4971.

DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)

LANGUAGE: English

ENTRY DATE: Entered STN: 24 Mar 2004
Last Updated on STN: 24 Mar 2004

AB Patients with chronic granulomatous disease (CGD) often suffer from life-threatening infections since their phagocytes lack a functioning **NADPH** oxidase. Therefore these cells are not able to **produce** reactive oxygen species to kill ingested **microorganisms**. The aim of the project is to develop a novel form of therapy with drug encapsulated liposomes. For therapy of CGD, glucose oxidase containing liposomes (GOL, EPC:EPG:Chol, 40:30:30 mol%; EPC:egg-phosphatidylcholin, EPG:egg-phosphatidylglycerol, Chol:cholesterol) are targeted to phagocytes in order to restore their microbicidal activity. GOL are taken up by CGD phagocytes and generate H2O2 inside the cells, which is then converted enzymatically to microbicidal hypochlorous acid. As recently shown, in vitro GOL-treated CGD-granulocytes killed Staph. aureus as efficiently as normal granulocytes. (Gerber et al., Blood. 2001; 98:3097-3105). In in vivo experiments with C57BL/6J mice (3H)/(14C)-labeled liposomes were mainly detected in the organs liver and spleen. These findings could be confirmed by a very sensitive non-radioactive GO-ELISA. The half life of EPC:EPG:Chol-liposomes in blood was 80 minutes investigated for 40 and 20 mM total **lipid** concentration (injection volume of 100 mul). After the injection of GO-liposomes (apprx0.2 U GO, 40 and 20 mM total **lipid** concentration) in C57BL/6J mice no methemoglobin formation was observed and in parallel no remarkable glucose decrease (<30%) could be measured in blood. Furthermore, mice showed no macroscopic necrotic lesions at the site of GOL-injection or in organs; weight and behaviour retained normal over 14 days until sacrifice. GOL related positive DHR-oxidation could be measured up to 480 minutes after GOL-injection in granulocytes and monocytes and was concentration dependent. Flow cytometric analyses in whole blood of GOL-treated mice showed an increase of CD11b/18 concomitant with an increase of CD21/35 indicating an reaction of adhesion and complement receptors on leukocytes. After intraperitoneal infection of gp91phox-/- mice (animal model for CGD) with 0.2X108 CFU of Staph. aureus, animals were treated with one intravenous dose of GOL (100 mul/40 mM EPG-GOL, 4.1 U/ml GO) on day 5 after infection. Animals were sacrificed on day 6 and bacterial **culture** (BC) was obtained from peritoneal lavage. In 10 of 11 treated animals the BC was reduced to <1X103 CFU/ml in contrast to only 70% in the non treated group (7/10). Abscess formation was observed mainly in the liver and the peritoneum and was not significantly different between the treated and nontreated group. Effects described in the wild-type experiments concerning the GOL-compartimentation and the complement/adhesion receptors could be

confirmed. Further experiments will refine the analyses of bacterial reduction and recruitment of GOL-positive granulocytes and monocytes under GOL-treatment in the infection model.

L17 ANSWER 19 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 2002-164408 [21] WPIDS
DOC. NO. CPI: C2002-050762
TITLE: Corynebacterium-originated glucose-6-phosphate dehydrogenase, modified to improve productivity of an L-amino acid, e.g., L-**lysine**, by a microorganism.
DERWENT CLASS: B05 D16 E19
INVENTOR(S): ANDO, S; HASHIMOTO, S; OCHIAI, K; YOKOI, H; YONETANI, Y
PATENT ASSIGNEE(S): (KYOW) KYOWA HAKKO KOGYO KK; (ANDO-I) ANDO S; (HASH-I) HASHIMOTO S; (OCHI-I) OCHIAI K; (YOKO-I) YOKOI H; (YONE-I) YONETANI Y
COUNTRY COUNT: 96
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001098472	A1	20011227	(200221)*	JA	49
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
AU 2001074537	A	20020102	(200230)		
EP 1302537	A1	20030416	(200328)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
JP 2002504621	X	20030826	(200357)		
US 2004171130	A1	20040902	(200458)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001098472	A1	WO 2001-JP5113	20010615
AU 2001074537	A	AU 2001-74537	20010615
EP 1302537	A1	EP 2001-941065	20010615
		WO 2001-JP5113	20010615
JP 2002504621	X	WO 2001-JP5113	20010615
		JP 2002-504621	20010615
US 2004171130	A1	WO 2001-JP5113	20010615
		US 2002-312007	20021223

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2001074537	A	Based on	WO 2001098472
EP 1302537	A1	Based on	WO 2001098472
JP 2002504621	X	Based on	WO 2001098472

PRIORITY APPLN. INFO: JP 2000-185789 20000621
AN 2002-164408 [21] WPIDS

AB WO 200198472 A UPAB: 20020416
NOVELTY - A polypeptide, of a Corynebacterium-originated glucose-6-phosphate dehydrogenase, has the fully defined 484 amino acid sequence (S2) given in the specification, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a polypeptide based on sequence (S2) but in which the Ala at number 213 is replaced by other amino acid and has glucose-6-phosphate dehydrogenase (G6PDH) activity;

(2) a polypeptide with the fully defined 484 amino acid sequence (S12) given in the specification;

(3) a polypeptide based on sequence (S2) but with some amino acids other than Ala at number 213 deleted, substituted or added and having G6PDH activity;

(4) a polypeptide based on sequence (S12) but with some amino acids other than Ala at number 213 deleted, substituted or added and having G6PDH activity;

(5) a **DNA** encoding any of the polypeptides;

(6) a **DNA** with the fully defined 1452 base sequence (N1) given in the specification;

(7) a **DNA** that contains a codon-substituted base sequence encoding an amino acid other than Ala in the base sequence from numbers 637-639 encoding Ala in sequence (S2);

(8) a **DNA** with the fully defined 1452 base sequence (N11) given in the specification;

(9) a **DNA** hybridizable with a **DNA** having a base sequence of (N1) under stringent conditions, which contains a base sequence containing a codon-substituted bass sequence encoding an amino acid other than Ala in sequence (N1) and encodes a polypeptide with G6PDH activity;

(10) a **DNA** hybridizable with a **DNA** having a base sequence of (N1) under stringent conditions, in which the base sequence contains a base at number 637 corresponding to the base for adenine in the base sequence (N1) and which encodes a polypeptide with G6PHD activity;

(11) a recombinant **DNA** obtained after integrating the **DNA** into a vector;

(12) a plasmid pCRBzwfM that can be sustained by an Escherichia coli TOP10 (FERM BP-7135);

(13) a transformant obtained by transferring the recombinant **DNA** or plasmid into a host cell;

(14) a process for producing the polypeptide; and

(15) a method for producing L-amino acid by using **NADPH** in the **culture** for biosynthesis before accumulation and collection of the product.

USE - The polypeptide is useful for improving the productivity of an L-amino acid, e.g., L-**lysine** (claimed).

ADVANTAGE - With the microbe, elevated productivity of L-amino acid is observed. 58M strain containing the modified protein produced 63.3 g/l of L-**lysine**, compared to the parent Number 58 at 49.7 g/l.

Dwg.0/2

L17 ANSWER 20 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 2001-616482 [71] WPIDS
DOC. NO. CPI: C2001-184625
TITLE: Novel L-galactose dehydrogenase protein and **nucleic** acid sequence encoding the protein for **producing** genetically modified plants

and **microorganisms** with enhanced ability to synthesize ascorbic acid.

DERWENT CLASS: B03 B04 C06 D16
INVENTOR(S): SMIRNOFF, N; WHEELER, G
PATENT ASSIGNEE(S): (ASCO-N) ASCORBEX LTD; (SMIR-I) SMIRNOFF N; (WHEE-I) WHEELER G
COUNTRY COUNT: 95
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2001072974	A2	20011004	(200171)*	EN	58
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
AU 2001042625	A	20011008	(200208)		
US 2004053235	A1	20040318	(200421)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2001072974	A2	WO 2001-GB1412	20010329
AU 2001042625	A	AU 2001-42625	20010329
US 2004053235	A1	WO 2001-GB1412	20010329
		US 2003-240136	20030312

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2001042625	A	Based on	WO 2001072974

PRIORITY APPLN. INFO: GB 2000-7651 20000329
AN 2001-616482 [71] WPIDS
AB WO 200172974 A UPAB: 20011203

NOVELTY - An isolated protein (I) having L-galactose dehydrogenase (L-galDH) biological activity, comprising a 319 residue amino acid sequence, fully defined in the specification or its homolog having 40 % identity to (S1), is new.

DETAILED DESCRIPTION - An isolated protein (I) having L-galactose dehydrogenase (L-galDH) biological activity, comprising a 319 residue amino acid sequence, fully defined in the specification or its homolog having 40 % identity to (S1), is new. (I) comprises the sequence (S1) (or its 40 % identical sequence) or the amino acid sequence AlaGluLeuArgGluLeuGlyArgThrGlyLeuLysLeuGlyLeuValGlyPheGly.

INDEPENDENT CLAIMS are also included for the following:

(1) a recombinant **nucleic** acid molecule (II) comprising an expression vector operatively linked to a **nucleic** acid molecule comprising a **nucleic** acid sequence encoding (I);

(2) an isolated **nucleic** acid molecule (III) comprising a **nucleic** acid sequence encoding (I);

(3) producing (I), comprising **culturing** an isolated cell that has been genetically modified to express (II) under conditions where the protein encoded by (II) is expressed by the cell

(4) a plant (IV) which has a genetic modification to increase the

action of L-galDH; and

(5) a **microorganism** (V) for **producing** ascorbic acid or its esters, having a genetic modification to increase the action of L-galDH.

USE - (IV) and (V) are useful for producing ascorbic acid or its esters (claimed). (I) is useful for producing antibodies against L-galDH proteins for use in purification and/or identification of (I). (II) is useful for generating transgenic organisms with enhanced ability to synthesize ascorbic acid. The sequences of (I) and (II) facilitate the production of a plant that has been genetically modified to express a mutated L-galDH protein which is resistant to herbicides that act against the naturally occurring L-galDH and to identify and/or design compounds that are inhibitors of L-galDH. The compounds can be used, for e.g. in a herbicide which acts on L-galDH and damages or kills plants that express the enzyme.

Dwg.0/6

L17 ANSWER 21 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER: 2000-414601 [36] WPIDS

DOC. NO. CPI: C2000-125802

TITLE: New carbonyl reductase reduces 4-haloacetoacetate ester to produce (S)-4-halo-3-hydroxybutyrate ester, using reduced beta-nicotinamide adenine dinucleotide as an electron donor.

DERWENT CLASS: B04 B05 D16

INVENTOR(S): KIMOTO, N; MITSUHASHI, K; YAMAMOTO, H

PATENT ASSIGNEE(S): (DAIL) DAICEL CHEM IND LTD; (DAIL) DAICEL CORP IND LTD

COUNTRY COUNT: 27

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 1013758	A2	20000628	(200036)*	EN	37
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
JP 2000236883	A	20000905	(200047)		28
US 6312933	B1	20011106	(200170)		
US 2002042110	A1	20020411	(200227)		
US 6416986	B1	20020709	(200253)		
US 2002127679	A1	20020912	(200262)		
US 6485948	B2	20021126	(200281)		
US 2004197773	A1	20041007	(200466)		
US 6969600	B2	20051129	(200578)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 1013758	A2	EP 1999-125572	19991221
JP 2000236883	A	JP 1999-171160	19990617
US 6312933	B1	US 1999-468738	19991221
US 2002042110	A1 Div ex	US 1999-468738	19991221
		US 2001-940019	20010827
US 6416986	B1 Div ex	US 1999-468738	19991221
		US 2001-940019	20010827
US 2002127679	A1 Div ex	US 1999-468738	19991221
		US 2001-940037	20010827
US 6485948	B2 Div ex	US 1999-468738	19991221

		US 2001-940037	20010827
US 2004197773	A1 Div ex	US 1999-468738	19991221
		US 2001-855309	20010514
US 6969600	B2 Div ex	US 1999-468738	19991221
		US 2001-855309	20010514

FILING DETAILS:

PATENT NO	KIND	PATENT NO
US 2002042110	A1 Div ex	US 6312933
US 6416986	B1 Div ex	US 6312933
US 2002127679	A1 Div ex	US 6312933
US 6485948	B2 Div ex	US 6312933
US 2004197773	A1 Div ex	US 6312933
US 6969600	B2 Div ex	US 6312933

PRIORITY APPLN. INFO: JP 1999-171160 19990617; JP 1998-363130 19981221

AN 2000-414601 [36] WPIDS

AB EP 1013758 A UPAB: 20000801

NOVELTY - New carbonyl reductase reduces 4-haloacetoacetate ester to produce (S)-4-halo-3-hydroxybutyrate ester, using reduced beta-nicotinamide adenine dinucleotide as an electron donor.

DETAILED DESCRIPTION - New carbonyl reductase (I) has the following physicochemical properties:

(a) can reduce 4-haloacetoacetate ester to produce (S)-4-halo-3-hydroxybutyrate ester using reduced beta -nicotinamide adenine dinucleotide as an electron donor;

(b) a high reductase activity for 4-chloroacetoacetate ester but does not substantially dehydrogenate any optical isomers of 4-halo-3-hydroxybutyrate ester; and

(c) shows a higher enzymatic activity when used with reduced beta **-nicotinamide adenine** dinucleotide **phosphate.**

INDEPENDENT CLAIMS are also included for:

(1) a polypeptide (II) comprising a 292 amino acid sequence and having enzymatic activity for catalyzing the reduction of 4-haloacetoacetate ester to (S)-4-3-halo-3-hydroxybutyrate ester using reduced beta -nicotinamide adenine dinucleotide as an electron donor;

(2) a **nucleic** acid (III) encoding (II);

(3) a recombinant vector (IV) comprising (III);

(4) a transformant (V) carrying (IV);

(5) **preparation** of (II), comprising **culturing** a **microorganism** belonging to the genus Kluyveromyces, and **producing** the carbonyl reductase (I) or the polypeptide (II);

(6) **producing** an alcohol, comprising reacting a ketone with (I), (II), or **microorganisms producing** them;

(7) a kit comprising (I), (II), (III), (IV) or (V).

USE - (I) is useful for producing hydroxy compounds, particularly (S)-4-halo-3-hydroxybutyrate ester, which is a useful drug intermediate.

ADVANTAGE - The reductase has excellent stereoselectivity producing optically active (S)-4-halo-3-hydroxybutyrate ester with high optical purity and in high yield.

Dwg.0/9

L17 ANSWER 22 OF 25 SCISEARCH COPYRIGHT (c) 2006 The Thomson Corporation on STN

ACCESSION NUMBER: 1999:36039 SCISEARCH
THE GENUINE ARTICLE: 154NH
TITLE: Microaerobic **lysine** fermentations and metabolic flux analysis
AUTHOR: Hua Q; Fu P C; Yang C; Shimizu K (Reprint)
CORPORATE SOURCE: Kyushu Inst Technol, Dept Biochem Engn & Sci, Iizuka, Fukuoka 820, Japan (Reprint)
COUNTRY OF AUTHOR: Japan
SOURCE: BIOCHEMICAL ENGINEERING JOURNAL, (NOV 1998) Vol. 2, No. 2, pp. 89-100.
ISSN: 1369-703X.
PUBLISHER: ELSEVIER SCIENCE SA, PO BOX 564, 1001 LAUSANNE, SWITZERLAND.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 25
ENTRY DATE: Entered STN: 1999
Last Updated on STN: 1999

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Oxygen supply is known to have an important influence on microaerobic production of amino acids, and several researches have shown that the behavior of many L-**lysine-producing microorganisms** under various aeration conditions are different. In order to investigate the fermentative behavior under microaerobic condition using Corynebacterium glutamicum ATCC 21253, several experiments were carried out where dissolved oxygen concentration was controlled at either 1% or 5%, as well as fully aerated condition. The calculation of intracellular metabolic fluxes was made to illustrate two kinds of metabolic characteristics observed in microaerobic **cultures**. Evaluated flux distributions indicated that the activities of TCA cycle enzymes decreased with the decrease in oxygen supply, resulting in the amplified phosphoenol pyruvate (PEP) carboxylation which contributed to the 30% of increase in **lysine** yield for the microaerobic **culture** at 5% DO concentration as compared with the case of aerobic fermentation. Further analysis indicates that **NADPH** may not be the yield-limiting factor, while low split-ratio of PEP carboxylation at PEP or aspartate branch at oxaloacetate is considered to limit **lysine** production under microaerobic conditions. (C) 1998 Elsevier Science S.A. All rights reserved.

L17 ANSWER 23 OF 25 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 1985-212559 [35] WPIDS
DOC. NO. CPI: C1985-092399
TITLE: **Culture** of **nucleic** acid related substance-**producing microorganisms** - with irradiation of light of wavelength more than 280 nm.
DERWENT CLASS: B04 D16
PATENT ASSIGNEE(S): (NICA) NIPPON CARBIDE KOGYO KK
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 60133880	A	19850717	(198535)*		9
JP 04029346	B	19920518	(199224)		12

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 60133880	A	JP 1983-239676	19831221
JP 04029346	B	JP 1983-239676	19831221

FILING DETAILS:

PATENT NO	KIND		PATENT NO
JP 04029346	B	Based on	JP 60133880

PRIORITY APPLN. INFO: JP 1983-239676 19831221
AN 1985-212559 [35] WPIDS
AB JP 60133880 A UPAB: 19930925
The microorganisms are **cultured** in a medium under irradiation of a light source containing a light of a wavelength of 280nm or more. The light to be irradiated may be any artificial and/or natural light having a wavelength of 280-800 (280-700) nm. The irradiation strength of the light is pref. 100,000-1 microW/cm2. Examples of **nucleic** acid-related substances are inosine, 5'-inosinic acid, guanosine, 5'-guanylic acid, 5'-adenosine triphosphate, FAD, **NADP**, cytidine diphosphate choline and orotidine. The light irradiation is pref. initiated during the logarithmic growth phase of the microorganisms.
ADVANTAGE - Productivity of a **nucleic** acid-related substance may be improved.
0/0

L17 ANSWER 24 OF 25 MEDLINE on STN
ACCESSION NUMBER: 72022121 MEDLINE
DOCUMENT NUMBER: PubMed ID: 4398752
TITLE: Nicotinamide dinucleotides in **microorganisms producing** peptide and macrolide antibiotics.
AUTHOR: Raczynska-Bojanowska K; Gaworowska-Michalik J; Midak B
SOURCE: Acta biochimica Polonica, (1971) Vol. 18, No. 2, pp. 199-207.
Journal code: 14520300R. ISSN: 0001-527X.
PUB. COUNTRY: Poland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197112
ENTRY DATE: Entered STN: 19900310
Last Updated on STN: 19980206
Entered Medline: 19711221

L17 ANSWER 25 OF 25 MEDLINE on STN
ACCESSION NUMBER: 71266027 MEDLINE
DOCUMENT NUMBER: PubMed ID: 4397940
TITLE: **NADPH**-regenerating systems in **microorganisms producing** macrolide antibiotics.
AUTHOR: Roszkowski J; Ruczaj Z; Sawnor-Korszynska D; Kotiuszko D; Morawska H; Siejko D; Raczynska-Bojanowska K
SOURCE: Acta microbiologica Polonica. Series B: Microbiologia applicata, (1971) Vol. 3, No. 2, pp. 97-106.
Journal code: 7610361. ISSN: 0567-7823.
PUB. COUNTRY: Poland

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197110
ENTRY DATE: Entered STN: 19900101
Last Updated on STN: 19980206
Entered Medline: 19711014

FILE 'HCAPLUS' ENTERED AT 11:44:28 ON 16 MAR 2006

L1 2 SEA FILE=REGISTRY ABB=ON PLU=ON METHIONINE/CN
L2 2 SEA FILE=REGISTRY ABB=ON PLU=ON CYSTEINE/CN
L3 1 SEA FILE=REGISTRY ABB=ON PLU=ON CYSTEIN/CN
L4 6 SEA FILE=REGISTRY ABB=ON PLU=ON (THREONINE OR LYSINE OR ISOLEUCINE)/CN
L5 10 SEA FILE=REGISTRY ABB=ON PLU=ON L1 OR L2 OR L3 OR L4
L6 1 SEA FILE=REGISTRY ABB=ON PLU=ON NADPH/CN
L7 1 SEA FILE=REGISTRY ABB=ON PLU=ON NADP/CN
L8 2 SEA FILE=REGISTRY ABB=ON PLU=ON L6 OR L7
L12 16860 SEA FILE=HCAPLUS ABB=ON PLU=ON (MICROORGANISM OR MICRO ORGANISM)(10A)(PREP? OR PRODUCE# OR PRODUCING OR PROD# OR MANUF?)
L18 2213 SEA FILE=HCAPLUS ABB=ON PLU=ON L12(L)(L5 OR METHIONINE OR CYSTEIN# OR THREONINE OR LYSINE OR ISOLEUCINE OR ISO LEUCINE OR SUGAR OR CARBOHYDRATE OR NUCLEIC OR DNA OR DEOXYRIBONUCLEIC OR DEOXY RIBONUCLEIC OR LIPID OR LYS OR MET OR CYS OR THR OR LYS OR ILE)
L19 16 SEA FILE=HCAPLUS ABB=ON PLU=ON L18(L)(L8 OR NADPH OR NADP OR (COENZYME OR CO ENZYME)(W)(II OR 2) OR NICOTINAMIDE ADENINE(2W)PHOSPHATE OR (TRIPHOSPHOPYRIDINE OR TRI(W)(PHOS PHOPYRIDINE OR PHOSPHO PYRIDINE) OR TRIPHOSPHO PYRIDINE)(W) NUCLEOTIDE)

L20 13 L19 NOT L15

L20 ANSWER 1 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 08 Sep 2005
ACCESSION NUMBER: 2005:979740 HCAPLUS
DOCUMENT NUMBER: 143:281659
TITLE: An anhydrofructose reductase from Sinorhizobium and the gene encoding and use of the enzyme in the diagnosis and therapy of disorders of sugar metabolism
INVENTOR(S): Giffhorn, Friedrich; Kuehn, Annette
PATENT ASSIGNEE(S): Universitaet des Saarlandes, Germany
SOURCE: PCT Int. Appl., 59 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005083066	A2	20050909	WO 2005-EP2102	20050228
WO 2005083066	A3	20051124		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,

MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

DE 102004010131 A1 20050915 DE 2004-102004010131 20040227
PRIORITY APPLN. INFO.: DE 2004-102004010131A 20040227

AB An anhydrofructose reductase, which catalyzes the reduction of 1,5-anhydro-D-fructose to anhydromannitol, is identified in Sinorhizobium and the gene encoding it is cloned. The enzyme may be useful in the diagnosis of diseases associated with abnormal blood **sugar** levels or in the manufacture of anhydrosugars for the treatment of disease such as diabetes mellitus. Antibodies to the enzyme may be used in the diagnosis of blood-**sugar** disorders. A **microorganism producing** the enzyme was identified by screening of soil samples. The best producer was identified as a strain of Sinorhizobium morelense. The enzyme was purified 75-fold (8% yield) by ion-exchange, size exclusion, and dye affinity chromatog. It is a monomer of 34850 dalton with an isoelec. point of 4.5. The enzyme had a Km of 6.4 mM for 1,5-anhydro-D-fructose and 0.2 mM **NADPH** and a pH optimum in the range 6.0-8.0.

L20 ANSWER 2 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 19 Aug 2005
ACCESSION NUMBER: 2005:823809 HCAPLUS
DOCUMENT NUMBER: 143:228043
TITLE: Preparation of amino acids with Coryneform bacteria overexpressing NADPH-resistant glucose 6-phosphate dehydrogenase
INVENTOR(S): Hans, Stephan; Bathe, Brigitte; Reth, Alexander; Thierbach, Georg; Reynen, Caroline; Moeckel, Bettina
PATENT ASSIGNEE(S): Degussa A.-G., Germany
SOURCE: PCT Int. Appl., 205 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005075631	A1	20050818	WO 2004-EP775	20040129

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,

MR, NE, SN, TD, TG
PRIORITY APPLN. INFO.: WO 2004-EP775 20040129

AB The invention relates to a process for the preparation of L-amino acids by fermentation of coryneform bacteria, which comprises carrying out the following steps: (a) fermenting the L-amino acid-producing bacteria in which at least the zwf gene is amplified, (b) concentrating the L-amino acid in the medium or in the cells of the bacteria and (c) isolating the L-amino acid produced. Thus, the zwf gene encoding glucose 6-phosphate dehydrogenase was cloned and sequenced. Mutants with decreased sensitivity to **NADPH**, e.g., A243T, M242S, etc. were prepared **Lysine**-producing Corynebacterium glutamicum mutants expressing the mutant zwf genes **produced** more **lysine** than the parent **microorganism**. **Lysine** -producing C. glutamicum mutants with inactivated pgi or poxB genes (encoding glucose 6-phosphate isomerase or pyruvate oxidase, resp.) were also constructed and shown to produce more **lysine**.
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 3 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 01 Jul 2005
ACCESSION NUMBER: 2005:570999 HCAPLUS
DOCUMENT NUMBER: 143:95915
TITLE: Lysine production in Corynebacterium glutamicum by altering metabolic flux by fructose-1,6-bisphosphatase in the pentose phosphate pathway
INVENTOR(S): Zelder, Oskar; Klopprogge, Corinna; Schroeder, Hartwig; Haefner, Stefan; Kroeger, Burkhard; Kiefer, Patrick; Heinzle, Elmar; Wittmann, Christoph
PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 93 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005059139	A2	20050630	WO 2004-IB4429	20041217
WO 2005059139	A3	20050811		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: WO 2003-IB6456 A 20031218

AB The present invention features methods of increasing the **prodn** . of a fine chemical, e.g., **lysine**, from a **microorganism** by deregulating an enzyme-encoding gene. In a preferred embodiment, the invention provides methods of increasing the production of **lysine** in Corynebacterium glutamicum by way of increasing the expression of fructose-1,6-bisphosphatase activity. The invention also provides a novel process for the production of **lysine** by way of regulating carbon flux towards oxaloacetate (OAA). Intracellular flux distributions for **lysine** -producing C. glutamicum on glucose and fructose reveal tremendous differences. On fructose, the flux into the pentose phosphate pathway is reduced to 14.4%, mainly due to theunfavorable combination of the entry of fructose at the level of fructose-1,6-bisphosphate and the inactivity of fructose-1,6-bisphosphatase. Flux patterns suggest several potential targets for optimization of **lysine** production by C. glutamicum on fructose, including fructose-1,6-bisphosphatase as one target for increasing the supply of **NADPH**. Plasmid constructs expressing fructose-1,6-bisphosphatase improve the production of **lysine** utilizing fructose or sucrose as a carbon source.

L20 ANSWER 4 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 16 May 2005
ACCESSION NUMBER: 2005:413130 HCAPLUS
DOCUMENT NUMBER: 143:400632
TITLE: Cloning, expression, purification, and analysis of mannitol dehydrogenase gene mtlK from Lactobacillus brevis
AUTHOR(S): Liu, Siqing; Saha, Badal; Cotta, Michael
CORPORATE SOURCE: Fermentation Biotechnology Research Unit, National Center for Agriculture Utilization Research, USDA, ARS, Peoria, IL, 61604, USA
SOURCE: Applied Biochemistry and Biotechnology (2005), 121-124, 391-401
CODEN: ABIBDL; ISSN: 0273-2289
PUBLISHER: Humana Press Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The com. production of mannitol involves high-pressure hydrogenation of fructose using a nickel catalyst, a costly process. Mannitol can be **produced** through fermentation by **microorganisms**. Currently, a few Lactobacillus strains are used to develop an efficient process for mannitol bioprodn.; most of the strains produce mannitol from fructose with other products. An approach toward improving this process would be to genetically engineer Lactobacillus strains to increase fructose-to-mannitol conversion with decreased production of other products. We cloned the gene mtlK encoding mannitol-2-dehydrogenase (EC 1.1.1.67) that catalyzes the conversion of fructose into mannitol from Lactobacillus brevis using genomic polymerase chain reaction. The mtlK clone contains 1328 bp of **DNA** sequence including a 1002-bp open reading frame that consisted of 333 amino acids with a predicted mol. mass of about 36 kDa. The functional mannitol-2-dehydrogenase was produced by overexpressing mtlK via pRSETa vector in Escherichia coli BL21pLysS on isopropyl-β-D-thiogalactopyranoside induction. The fusion protein is able to catalyze the reduction of fructose to mannitol at pH 5.35. Similar rates of catalytic reduction were observed using either the NADH or **NADPH** as cofactor under in vitro assay conditions. Genetically engineered Lactobacillus plantarum TF103 carrying the mtlK gene of L. brevis indicated increased mannitol production from glucose.

The evaluation of mixed **sugar** fermentation and mannitol production by this strain is in progress.
REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 5 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 13 Dec 2004
ACCESSION NUMBER: 2004:1067286 HCAPLUS
DOCUMENT NUMBER: 142:260005
TITLE: Fatty acid biosynthesis in microorganisms being used for Single Cell Oil production
AUTHOR(S): Ratledge, Colin
CORPORATE SOURCE: Department of Biological Sciences, University of Hull, Hull, HU6 7RX, UK
SOURCE: Biochimie (2004), 86(11), 807-815
CODEN: BICMBE; ISSN: 0300-9084
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Single cell oils (SCOs) are now **produced** by various **microorganisms** as com. sources of arachidonic acid (ARA) and docosahexaenoic acid (DHA). These oils are now used extensively as dietary supplements in infant formulas. An understanding of the underlying biochem. and genetics of oil accumulation in such microorganisms is therefore essential if **lipid** yields are to be improved. Also an understanding of the biosynthetic pathways involved in the production of these polyunsatd. fatty acids (PUFAs) is also highly desirable as a prerequisite to increasing their content in the oils. An account is provided of the biosynthetic machinery that is necessary to achieve oil accumulation in an oleaginous species where it can account for **lipid** build up in excess of 70% of the cell biomass. While PUFA **production** in most **microorganisms** uses a conventional fatty acid synthase (FAS) system followed by a series of desaturases and elongases, in Schizochytrium sp., and probably related thraustochytrid marine protists, PUFA synthesis now appears to be via a polyketide synthase (PKS) route. This route is discussed. It clearly represents a major departure from conventional fatty acid biosynthesis, possibly as a means of decreasing the amount of **NADPH** that is needed in the overall process.
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 6 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 20 Oct 2004
ACCESSION NUMBER: 2004:866720 HCAPLUS
DOCUMENT NUMBER: 142:112546
TITLE: Metabolic network analysis on Phaffia rhodozyma yeast using 13C-labeled glucose and gas chromatography-mass spectrometry
AUTHOR(S): Cannizzaro, Christopher; Christensen, Bjarke; Nielsen, Jens; von Stockar, Urs
CORPORATE SOURCE: Laboratory of Chemical and Biochemical Engineering, Swiss Federal Institute of Technology, Lausanne, CH-1015, Switz.
SOURCE: Metabolic Engineering (2004), 6(4), 340-351
CODEN: MEENFM; ISSN: 1096-7176

PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Carotenoid **production** by **microorganisms**, as opposed to chemical synthesis, could fulfill an ever-increasing demand for 'all natural' products. The yeast Phaffia rhodozyma has received considerable attention because it produces the red pigment astaxanthin, commonly used as an animal feed supplement. In order to have a better understanding of its metabolism, labeling expts. with [1-13C]glucose were conducted with the wildtype strain (CBS5905 T) and a hyper-producing carotenoid strain (J4-3) in order to determine their metabolic network structure and estimate intracellular fluxes. Amino acid labeling patterns, as determined by GC-MS, were in accordance with a metabolic network consisting of the Embden-Meyerhof-Parnas pathway, the pentose phosphate pathway, and the TCA cycle. Glucose was mainly consumed along the pentose phosphate pathway (.apprx.65% for wildtype strain), which reflected high **NADPH** requirements for **lipid** biosynthesis. Although common to other oleaginous yeast, there was no, or very little, malic enzyme activity for carbon-limited growth. In addition, there was no evidence of phosphoketolase activity. The central carbon metabolism of the mutant strain was similar to that of the wildtype strain, though the relative pentose phosphate flux was lower and the TCA cycle flux in accordance with the biomass yield being lower.
REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 7 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 28 Jan 2002
ACCESSION NUMBER: 2002:73786 HCAPLUS
DOCUMENT NUMBER: 136:305870
TITLE: Overproduction, Purification, and Characterization of Recombinant Aspartate Semialdehyde Dehydrogenase from Arabidopsis thaliana
AUTHOR(S): Paris, Stephane; Wessel, Peter M.; Dumas, Renaud
CORPORATE SOURCE: UMR 1932, Unite Mixte CNRS/INRA/Aventis CropScience, Lyon, 69263, Fr.
SOURCE: Protein Expression and Purification (2002), 24(1), 99-104
CODEN: PEXPEJ; ISSN: 1046-5928
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In plant and **microorganisms**, aspartate semialdehyde dehydrogenase (ASDH) **produces** the branch point intermediate between the **lysine** and **threonine/methionine** pathways. In this study, we report the first cDNA cloning, purification, and characterization of a plant ASDH. The Arabidopsis thaliana ASDH is an homodimeric enzyme composed of subunits of 36 kDa. The plant enzyme exhibited a specific activity of 26 μmol **NADPH** oxidized min-1 mg-1 of protein with a Km value for **NADPH** of 92 μM. ASDH showed cooperative behavior for aspartyl phosphate with a K0.5 value of 37 μM. (c) 2002 Academic Press.
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 8 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 05 Oct 2001
ACCESSION NUMBER: 2001:728936 HCAPLUS
DOCUMENT NUMBER: 136:17815
TITLE: In vitro reconstitution of the myxochelin biosynthetic machinery of Stigmatella aurantiaca Sg a15: biochemical characterization of a reductive release mechanism from nonribosomal peptide synthetases
AUTHOR(S): Gaitatzis, Nikolaos; Kunze, Brigitte; Muller, Rolf
CORPORATE SOURCE: Gesellschaft fur Biotechnologische Forschung-German Research Centre for Biotechnology, Braunschweig, 38124, Germany
SOURCE: Proceedings of the National Academy of Sciences of the United States of America (2001), 98(20), 11136-11141
CODEN: PNASA6; ISSN: 0027-8424
PUBLISHER: National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
AB **Microorganisms produce** iron-chelating compds. to sequester the iron essential for growth from the environment. Many of these compds. are biosynthesized by nonribosomal peptide synthetases, some in cooperation with polyketide synthases. Myxochelins are produced by the myxobacterium S. aurantiaca Sg a15, and the corresponding gene cluster was cloned recently. We have undertaken to express heterologously the myxochelin biosynthetic machinery in Escherichia coli. To activate the involved proteins posttranslationally, they were coexpressed with the phosphopantetheinyltransferase MtaA from the myxothiazol biosynthetic gene cluster. Phosphopantetheinylation of the carrier proteins could be verified by protein mass anal. Six active domains in proteins MxcE, MxcF, and MxcG are capable of assembling myxochelin from ATP, NAD(P)H, **lysine**, and 2,3-dihydroxybenzoic acid in vitro. This fact demonstrates that the condensation domain of MxcG performs 2 condensation reactions, creating the aryl-capped α-amide and the aryl-capped γ-amide of the mol. A previously unknown type of reductive release is performed by the reduction domain of MxcG, which alternatively uses **NADPH** and NADH to set free the peptidyl-carrier protein-bound thioester as an aldehyde and further reduces it to the alc. structure that can be found in myxochelin A. This type of reductive release seems to be a general mechanism in polyketide and nonribosomal peptide biosynthesis, because several systems with C-terminal similarity to the reductase domain of MxcG can be found in the data bases. Alternatively, the aldehyde can be transaminated, giving rise to a terminal amine.
REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 9 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 27 Jul 2001
ACCESSION NUMBER: 2001:545704 HCAPLUS
DOCUMENT NUMBER: 135:136473
TITLE: Manufacture of five-carbon sugars and sugar alcohols using microorganisms deficient in or transformed with genes involved in pentose-phosphate pathway
INVENTOR(S): Miasnikov, Andrei; Ojamo, Heikki; Povelainen,

Mira; Gros, Hakan; Toivari, Mervi; Richard, Peter; Ruohonen, Laura; Koivuranta, Kari; Londesborough, John; Aristidou, Aristos; Penttilae, Merja; Plazanet-Menut, Claire; Deutscher, Josef
PATENT ASSIGNEE(S): Xyrofin Oy, Finland
SOURCE: PCT Int. Appl., 205 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001053306	A2	20010726	WO 2001-FI51	20010122
WO 2001053306	A3	20020418		
W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2398237	AA	20010726	CA 2001-2398237	20010122
AU 2001031784	A5	20010731	AU 2001-31784	20010122
BR 2001007918	A	20021105	BR 2001-7918	20010122
EP 1254244	A2	20021106	EP 2001-903815	20010122
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003520583	T2	20030708	JP 2001-553780	20010122
US 2003068791	A1	20030410	US 2001-908744	20010720
PRIORITY APPLN. INFO.:			US 2000-488581 A	20000121
			US 1992-973325 B2	19921105
			US 1993-110672 B1	19930824
			US 1995-368395 A1	19950103
			US 1997-790585 A2	19970129
			WO 2001-FI51 W	20010122

AB The invention relates to the methods of manufacturing five-carbon sugars and sugar alcs. as well as other compds. derived from pentose-phosphate pathway (PPP) from readily available substrates such a hexoses using metabolically engineered microbial hosts. A series of the genes involved in the PPP are cloned from various microorganisms or disrupted in the host of either Bacillus subtilis or Saccharomyces cerevisiae. This strategy is demonstrated to successfully increase the yield of a variety of the five-carbon sugar or sugar alcs. for manufacturing purpose.

IT **53-57-6, NADPH 53-59-8, NADP**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(**manufacture** of five-carbon **sugars** and **sugar**

alcs. using **microorganisms** deficient in or transformed with genes involved in pentose-phosphate pathway)

L20 ANSWER 10 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 01 Mar 2000
ACCESSION NUMBER: 2000:138169 HCAPLUS
DOCUMENT NUMBER: 132:234146
TITLE: Relevance and isotopic assessment of hexose-6-phosphate recycling in microorganisms
AUTHOR(S): Portais, Jean-Charles; Tavernier, Patricia; Gosselin, Isabelle; Barbotin, Jean-Noel
CORPORATE SOURCE: Laboratoire de Genie Cellulaire, UPRESA-CNRS 6022, Faculte des Sciences, Universite de Picardie Jules Verne, Amiens, F-80039, Fr.
SOURCE: Journal of Biotechnology (2000), 77(1), 49-64
CODEN: JBITD4; ISSN: 0168-1656
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Some pathways of hexose-6-phosphate recycling, those involving a breakdown of the hexose skeleton, through **carbohydrate** metabolism of microorganisms were analyzed for both metabolic and isotopic effects. Two modes of recycling were proposed based on the degree of alteration of the hexose mol. through the catabolic part of the cycle. Simulated operation of most of these pathways resulted in increased synthesis of hexose-6-phosphate and **NADPH**, and reduced the NADH and moreover the ATP synthesis within the **carbohydrate** metabolism A basic model for the quant. assessment by means of isotopic studies of the processes of hexose-6-phosphate recycling is presented. The model was initially designed for the study of **microorganisms producing** polysaccharides, but it can be extended to other situations.
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 11 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 17 Dec 1999
ACCESSION NUMBER: 1999:795985 HCAPLUS
DOCUMENT NUMBER: 132:31775
TITLE: Vitamin C (L-ascorbic acid) production in microorganisms and plants genetically engineered for increased sugar epimerase activity
INVENTOR(S): Berry, Alan; Running, Jeffrey A.; Severson, David K.; Burlingame, Richard P.
PATENT ASSIGNEE(S): DCV Inc., Doing Business as Bio-Technical Resources, USA
SOURCE: PCT Int. Appl., 187 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9964618	A1	19991216	WO 1999-US11576	19990526

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL,

IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 2002012979	A1	20020131	US 1999-318271	19990525
CA 2331198	AA	19991216	CA 1999-2331198	19990526
AU 9942051	A1	19991230	AU 1999-42051	19990526
EP 1084267	A1	20010321	EP 1999-925846	19990526
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE, PT, IE, FI				
JP 2002517256	T2	20020618	JP 2000-553608	19990526
PRIORITY APPLN. INFO.:			US 1998-88549P P	19980608
			US 1999-125073P P	19990317
			US 1999-125054P P	19990318
			WO 1999-US11576 W	19990526

AB A biosynthetic method for producing vitamin C (ascorbic acid, L-ascorbic acid, or AA) is disclosed, such method including fermentation of a microorganism or plant having at least one genetic modification to increase the action of an enzyme involved in the ascorbic acid biosynthetic pathway. Included is the use of nucleotide sequences encoding epimerases, including the endogenous GDP-D-mannose:GDP-L-galactose epimerase from the L-ascorbic acid pathway and homologues thereof for the purposes of improving the biosynthetic production of ascorbic acid. The present invention also relates to genetically modified microorganisms, such as strains of microalgae, bacteria and yeast useful for producing L-ascorbic acid, and to genetically modified plants, useful for producing consumable plant food products.

IT **53-57-6, NADPH**
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(epimerase cofactor; vitamin C (L-ascorbic acid) **production** in **microorganisms** and plants genetically engineered for increased **sugar** epimerase activity)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 12 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 22 Oct 1999
ACCESSION NUMBER: 1999:672425 HCAPLUS
DOCUMENT NUMBER: 131:298724
TITLE: Enzymic production of vitamin B6
INVENTOR(S): Hoshino, Tatsuo; Tazoe, Masaaki
PATENT ASSIGNEE(S): F. Hoffmann-La Roche AG, Switz.
SOURCE: Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

EP 950715	A2	19991020	EP 1999-106676	19990401
EP 950715	A3	20010725		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
CA 2268539	AA	19991015	CA 1999-2268539	19990412
NO 9901738	A	19991018	NO 1999-1738	19990413
AU 9923727	A1	19991028	AU 1999-23727	19990413
JP 2000023690	A2	20000125	JP 1999-104958	19990413
MX 9903430	A	20000228	MX 1999-3430	19990413
IN 188473	A	20020928	IN 1999-MA412	19990413
US 6060267	A	20000509	US 1999-291718	19990414
BR 9902362	A	20000606	BR 1999-2362	19990414
CN 1232875	A	19991027	CN 1999-105083	19990415
PRIORITY APPLN. INFO.:			EP 1998-106812 A	19980415

OTHER SOURCE(S): CASREACT 131:298724

AB A process for an enzymic production of vitamin B6 which comprises incubating 1-deoxy-D-threo-pentulose and 4-hydroxy-L-**threonine** with an enzyme reaction system **prepared** from cells of **microorganism** belonging to genus Rhizobium, Sinorhizobium, Flavobacterium, Chryseobacterium, Lactobacillus, Arthrobacter, Bacillus, Escherichia, Pseudomonas, Stenotrophomonas, Enterobacter, Corynebacterium, Brevibacterium, Exiguobacterium, Saccharomyces, Yamadazma, Pichia, and Candida, in the presence of **NADP**+, NAD+, ATP. Mn2+ and Mg2+ stimulate the above reaction. This process affords high yields of vitamin B6, a vitamin essential for the nutrition of animals, plants, and microorganisms and useful as a medicine or food additive.

L20 ANSWER 13 OF 13 HCAPLUS COPYRIGHT 2006 ACS on STN
ED Entered STN: 12 May 1984
ACCESSION NUMBER: 1979:489520 HCAPLUS
DOCUMENT NUMBER: 91:89520
TITLE: Phosphorylation
INVENTOR(S): Yasudo, Gyo; Kimura, Kazuo
PATENT ASSIGNEE(S): Kyowa Hakko Kogyo Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 54046891	A2	19790413	JP 1977-113194	19770921
JP 58052639	B4	19831124		
PRIORITY APPLN. INFO.:			JP 1977-113194 A	19770921

AB Cells or cell **prepns.** of **microorganisms** that **produces** a desired phosphorylated compound from the corresponding precursor and high-energy phosphate and that produces a high-energy phosphate from an energy source and phosphate donor and also regenerates low-energy phosphates to high-energy phosphates are incubated in a reaction mixture containing a precursor of the desired phosphate donor to yield a phosphate compound such as **NADP** [**53-59-8**] CoA, FAD, and cytidine diphosphate choline; this method does not require expensive high-energy phosphates such as ATP. Thus, 2 g of a mixture containing freeze-dried Saccharomyces cerevisiae ATCC

15248 and Brevibacterium ammoniagenes ATCC 6872 (1:2) was suspended in a solution containing 5 g physiol. saline and 5 g 1% chitosan, and to this was added a solution containing benzene 29, hexane 11, Et cellulose 3, and sorbitan monolaurate 0.8 g. The mixture was added to 120 mL 1% poly(ethylene glycol) (pH 8.5), and benzene was removed by adding cold hexane at 10-15 mL/min for 1 h to yield microcapsules of the microbial preparation A mixture containing the microcapsules 10 mL, NAD [53-84-9] 0.66, **cysteine**-HCl 0.07, MgSO4.7H2O 0.1, glucose 7.2, and inorg. phosphate 3.8 g was incubated at 37° for 2 h to yield 0.13 g **NADP**.

(FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO' ENTERED AT 11:47:38 ON 16 MAR 2006)

L1	2	SEA FILE=REGISTRY ABB=ON PLU=ON METHIONINE/CN
L2	2	SEA FILE=REGISTRY ABB=ON PLU=ON CYSTEINE/CN
L3	1	SEA FILE=REGISTRY ABB=ON PLU=ON CYSTEIN/CN
L4	6	SEA FILE=REGISTRY ABB=ON PLU=ON (THREONINE OR LYSINE OR ISOLEUCINE)/CN
L5	10	SEA FILE=REGISTRY ABB=ON PLU=ON L1 OR L2 OR L3 OR L4
L6	1	SEA FILE=REGISTRY ABB=ON PLU=ON NADPH/CN
L7	1	SEA FILE=REGISTRY ABB=ON PLU=ON NADP/CN
L8	2	SEA FILE=REGISTRY ABB=ON PLU=ON L6 OR L7
L12	16860	SEA FILE=HCAPLUS ABB=ON PLU=ON (MICROORGANISM OR MICRO ORGANISM)(10A)(PREP? OR PRODUCE# OR PRODUCING OR PROD# OR MANUF?)
L18	2213	SEA FILE=HCAPLUS ABB=ON PLU=ON L12(L)(L5 OR METHIONINE OR CYSTEIN# OR THREONINE OR LYSINE OR ISOLEUCINE OR ISO LEUCINE OR SUGAR OR CARBOHYDRATE OR NUCLEIC OR DNA OR DEOXYRIBONUCLEIC OR DEOXY RIBONUCLEIC OR LIPID OR LYS OR MET OR CYS OR THR OR LYS OR ILE)
L19	16	SEA FILE=HCAPLUS ABB=ON PLU=ON L18(L)(L8 OR NADPH OR NADP OR (COENZYME OR CO ENZYME)(W)(II OR 2) OR NICOTINAMIDE ADENINE(2W)PHOSPHATE OR (TRIPHOSPHOPYRIDINE OR TRI(W)(PHOS PHOPYRIDINE OR PHOSPHO PYRIDINE) OR TRIPHOSPHO PYRIDINE)(W) NUCLEOTIDE)
L21	52	SEA L19
L25	4	SEA L21(L) MODIF?

L1	2	SEA FILE=REGISTRY ABB=ON PLU=ON METHIONINE/CN
L2	2	SEA FILE=REGISTRY ABB=ON PLU=ON CYSTEINE/CN
L3	1	SEA FILE=REGISTRY ABB=ON PLU=ON CYSTEIN/CN
L4	6	SEA FILE=REGISTRY ABB=ON PLU=ON (THREONINE OR LYSINE OR ISOLEUCINE)/CN
L5	10	SEA FILE=REGISTRY ABB=ON PLU=ON L1 OR L2 OR L3 OR L4
L6	1	SEA FILE=REGISTRY ABB=ON PLU=ON NADPH/CN
L7	1	SEA FILE=REGISTRY ABB=ON PLU=ON NADP/CN
L8	2	SEA FILE=REGISTRY ABB=ON PLU=ON L6 OR L7
L12	16860	SEA FILE=HCAPLUS ABB=ON PLU=ON (MICROORGANISM OR MICRO ORGANISM)(10A)(PREP? OR PRODUCE# OR PRODUCING OR PROD# OR MANUF?)
L18	2213	SEA FILE=HCAPLUS ABB=ON PLU=ON L12(L)(L5 OR METHIONINE OR CYSTEIN# OR THREONINE OR LYSINE OR ISOLEUCINE OR ISO LEUCINE OR SUGAR OR CARBOHYDRATE OR NUCLEIC OR DNA OR DEOXYRIBONUCLEIC OR DEOXY RIBONUCLEIC OR LIPID OR LYS OR MET OR CYS OR THR OR LYS OR ILE)
L19	16	SEA FILE=HCAPLUS ABB=ON PLU=ON L18(L)(L8 OR NADPH OR NADP OR (COENZYME OR CO ENZYME)(W)(II OR 2) OR NICOTINAMIDE

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                ADENINE(2W)PHOSPHATE OR (TRIPHOSPHOPYRIDINE OR TRI(W)(PHOS
                PHOPYRIDINE OR PHOSPHO PYRIDINE) OR TRIPHOSPHO PYRIDINE)(W)
                NUCLEOTIDE)
L21          52 SEA L19
L26           1 SEA L21(L) EVOLV?


L1            2 SEA FILE=REGISTRY ABB=ON  PLU=ON  METHIONINE/CN
L2            2 SEA FILE=REGISTRY ABB=ON  PLU=ON  CYSTEINE/CN
L3            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  CYSTEIN/CN
L4            6 SEA FILE=REGISTRY ABB=ON  PLU=ON  (THREONINE OR LYSINE OR
                ISOLEUCINE)/CN
L5           10 SEA FILE=REGISTRY ABB=ON  PLU=ON  L1 OR L2 OR L3 OR L4
L6            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  NADPH/CN
L7            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  NADP/CN
L8            2 SEA FILE=REGISTRY ABB=ON  PLU=ON  L6 OR L7
L12       16860 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (MICROORGANISM OR MICRO
                ORGANISM)(10A)(PREP? OR PRODUCE# OR PRODUCING OR PROD# OR
                MANUF?)
L18        2213 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L12(L)(L5 OR METHIONINE
                OR CYSTEIN# OR THREONINE OR LYSINE OR ISOLEUCINE OR ISO
                LEUCINE OR SUGAR OR CARBOHYDRATE OR NUCLEIC OR DNA OR
                DEOXYRIBONUCLEIC OR DEOXY RIBONUCLEIC OR LIPID OR LYS OR
                MET OR CYS OR THR OR LYS OR ILE)
L19          16 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L18(L)(L8 OR NADPH OR
                NADP OR (COENZYME OR CO ENZYME)(W)(II OR 2) OR NICOTINAMIDE
                ADENINE(2W)PHOSPHATE OR (TRIPHOSPHOPYRIDINE OR TRI(W)(PHOS
                PHOPYRIDINE OR PHOSPHO PYRIDINE) OR TRIPHOSPHO PYRIDINE)(W)
                NUCLEOTIDE)
L21          52 SEA L19
L27          14 SEA L21(L)(METHOD OR TECHNIQUE)

L28           7 S (L25 OR L26 OR L27) NOT L16
L29           7 DUP REM L28 (0 DUPLICATES REMOVED)

L29  ANSWER 1 OF 7  WPIDS  COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER:     2004-158569 [16]   WPIDS
DOC. NO. CPI:         C2004-063230
TITLE:                Producing 3-hydroxycyclohexanone useful for producing
                      substituted resorcinol derivatives, by reducing
                      1,3-cyclohexanedione with enzyme, microorganism
                      producing the enzyme or treated enzyme, and
                      recovering product.
DERWENT CLASS:        D16 E15
INVENTOR(S):          ITOH, N; WAKITA, R
PATENT ASSIGNEE(S):   (SUMO) SUMITOMO CHEM CO LTD
COUNTRY COUNT:        33
PATENT INFORMATION:

     PATENT NO        KIND DATE     WEEK      LA   PG
     ------------------------------------------------
     EP 1382683       A2 20040121 (200416)* EN   37
         R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU
            LV MC MK NL PT RO SE SI SK TR
     JP 2004097208    A  20040402 (200424)       49
     US 2005272136    A1 20051208 (200581)
     EP 1382683       B1 20060222 (200615)  EN
         R: CH DE FR GB IT LI
```

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 1382683	A2	EP 2003-254408	20030711
JP 2004097208	A	JP 2003-189299	20030701
US 2005272136	A1	US 2003-617034	20030711
EP 1382683	B1	EP 2003-254408	20030711

PRIORITY APPLN. INFO: JP 2002-205207 20020715
AN 2004-158569 [16] WPIDS
AB EP 1382683 A UPAB: 20040305
NOVELTY - Producing (M1) 3-hydroxycyclohexanone (I), by reacting 1,3-cyclohexanedione with an enzyme having an ability to reduce 1,3-cyclohexanedione to (I), a microorganism producing the enzyme or a treated material of the enzyme or of the microorganism, and recovering resulting (I).

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for optically active 3-hydroxycyclohexanone.

USE - (M1) is useful for producing 3-hydroxycyclohexanone (claimed). (I) is useful for producing substituted resorcinol derivatives.

ADVANTAGE - (M1) efficiently and readily produces (I).

Dwg.0/0

L29 ANSWER 2 OF 7 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 2003-256375 [25] WPIDS
CROSS REFERENCE: 2003-239344 [23]; 2003-239345 [23]; 2003-248015 [24]; 2003-248016 [24]; 2003-248017 [24]; 2003-256373 [25]; 2003-256374 [25]; 2003-256376 [25]; 2003-256377 [25]; 2003-289779 [28]
DOC. NO. CPI: C2003-066424
TITLE: Preparing L-amino acids, e.g. L-threonine by fermenting microorganisms of Enterobactericeae family in which at least the pykF gene is enhanced, in particular overexpressed, and isolating the desired amino acid.
DERWENT CLASS: B05 D16 E16
INVENTOR(S): RIEPING, M
PATENT ASSIGNEE(S): (DEGS) DEGUSSA AG
COUNTRY COUNT: 100
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2003008609	A2	20030130	(200325)*	EN	29
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW					
AU 2002319281	A1	20030303	(200452)		
AU 2002319281	A8	20051020	(200615)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003008609	A2	WO 2002-EP7367	20020703
AU 2002319281	A1	AU 2002-319281	20020703
AU 2002319281	A8	AU 2002-319281	20020703

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2002319281	A1 Based on	WO 2003008609
AU 2002319281	A8 Based on	WO 2003008609

PRIORITY APPLN. INFO: US 2001-306869P 20010723; DE 2001-10135053 20010718

AN 2003-256375 [25] WPIDS

CR 2003-239344 [23]; 2003-239345 [23]; 2003-248015 [24]; 2003-248016 [24]; 2003-248017 [24]; 2003-256373 [25]; 2003-256374 [25]; 2003-256376 [25]; 2003-256377 [25]; 2003-289779 [28]

AB WO2003008609 A UPAB: 20060302

NOVELTY - Preparing (M) L-amino acids, in particular L-threonine (L-Thr) by fermenting microorganisms of Enterobacteriaceae family which produce L-Thr and in which at least pykF gene or nucleotide sequence which codes for this, is enhanced, in particular over-expressed; concentrating L-Thr in medium or in cells of microorganism; isolating L-Thr, constituents of fermentation broth and/or biomass wholly or partly, optionally remaining in product, is new.

USE - M is useful for preparing L-amino acids, in particular L-threonine.

ADVANTAGE - M provides improved production of L-amino acids in particular L-threonine.

DESCRIPTION OF DRAWING(S) - The figure shows the plasmid pTrc99ApykF which contains the pykF gene.

Dwg.1/1

L29 ANSWER 3 OF 7 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER: 2003-256373 [25] WPIDS

CROSS REFERENCE: 2003-239344 [23]; 2003-239345 [23]; 2003-248015 [24]; 2003-248016 [24]; 2003-248017 [24]; 2003-256374 [25]; 2003-256375 [25]; 2003-256376 [25]; 2003-256377 [25]; 2003-289779 [28]

DOC. NO. CPI: C2003-066422

TITLE: Preparing L-amino acids, e.g. L-..threonine by fermenting microorganisms of Enterobactericeae family in which at least the malE gene is enhanced, in particular overexpressed, and isolating the desired amino acid.

DERWENT CLASS: B05 D16 E16

INVENTOR(S): RIEPING, M

PATENT ASSIGNEE(S): (DEGS) DEGUSSA AG

COUNTRY COUNT: 101

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2003008605	A2	20030130	(200325)*	EN	29

RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE
DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG
KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM
PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ
VN YU ZA ZM ZW

DE 10135053 A1 20030206 (200325)
EP 1407025 A2 20040414 (200426) EN
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV
MC MK NL PT RO SE SI SK TR
AU 2002325293 A1 20030303 (200452)
AU 2002325293 A8 20051020 (200615)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003008605	A2	WO 2002-EP7354	20020703
DE 10135053	A1	DE 2001-10135053	20010718
EP 1407025	A2	EP 2002-758301	20020703
		WO 2002-EP7354	20020703
AU 2002325293	A1	AU 2002-325293	20020703
AU 2002325293	A8	AU 2002-325293	20020703

FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 1407025	A2 Based on	WO 2003008605
AU 2002325293	A1 Based on	WO 2003008605
AU 2002325293	A8 Based on	WO 2003008605

PRIORITY APPLN. INFO: US 2001-306869P 20010723; DE 2001-10135053 20010718

AN 2003-256373 [25] WPIDS

CR 2003-239344 [23]; 2003-239345 [23]; 2003-248015 [24]; 2003-248016 [24]; 2003-248017 [24]; 2003-256374 [25]; 2003-256375 [25]; 2003-256376 [25]; 2003-256377 [25]; 2003-289779 [28]

AB WO2003008605 A UPAB: 20060302
NOVELTY - Preparing (M1) L-amino acids, in particular L-threonine (L-Thr) by fermenting microorganisms of Enterobacteriaceae family which produce L-Thr and in which at least malE gene or nucleotide sequence which codes for this, is enhanced, in particular over-expressed; concentrating L-Thr in medium or in cells of microorganism; isolating L-Thr, constituents of fermentation broth and/or biomass wholly or partly, optionally remaining in product, is new.

USE - (M1) is useful for preparing L-amino acids, in particular L-threonine.

ADVANTAGE - (M1) provides improved production of L-amino acids in particular L-threonine.

DESCRIPTION OF DRAWING(S) - The figure shows the plasmid pTrc99AmalE which contains the malE gene.

Dwg.1/1

L29 ANSWER 4 OF 7 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 1999-561675 [47] WPIDS
DOC. NO. CPI: C1999-163670
TITLE: New transformed microorganisms for producing products such as ethanol, amino acids, polyalkoxyalkanoate or

pentitols.
DERWENT CLASS: A23 D16 E16 E17 H06
INVENTOR(S): ARISTIDOU, A; LONDESBOROUGH, J; PENTTILAE, M; RICHARD, P; RUOHONEN, L; SOEDERLUND, H; TELEMAN, A; TOIVARI, M
PATENT ASSIGNEE(S): (VALW) VALTION TEKNILLINEN TUTKIMUSKESKUS
COUNTRY COUNT: 86
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9946363	A1	19990916	(199947)*	EN	92
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW					
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW					
AU 9927303	A	19990927	(200006)		
EP 981600	A1	20000301	(200016)	EN	
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					
JP 2001525682	W	20011211	(200204)		88
AU 756211	B	20030109	(200320)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9946363	A1	WO 1999-FI185	19990311
AU 9927303	A	AU 1999-27303	19990311
EP 981600	A1	EP 1999-907641	19990311
		WO 1999-FI185	19990311
JP 2001525682	W	JP 1999-545439	19990311
		WO 1999-FI185	19990311
AU 756211	B	AU 1999-27303	19990311

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9927303	A	Based on	WO 9946363
EP 981600	A1	Based on	WO 9946363
JP 2001525682	W	Based on	WO 9946363
AU 756211	B	Previous Publ.	AU 9927303
		Based on	WO 9946363

PRIORITY APPLN. INFO: FI 1998-551 19980311
AN 1999-561675 [47] WPIDS
AB WO 9946363 A UPAB: 19991116
NOVELTY - New microorganisms are transformed with at least one recombinant **DNA** molecule encoding or otherwise causing the expression of at least one enzyme that causes the functional coupling of the oxidation and reduction of substrates by 2 pyridine nucleotide-linked dehydrogenase (PNLD) reactions with different specificities for the NAD/NADH and **NADP/NADPH** coenzyme couples.
DETAILED DESCRIPTION - New microorganisms are transformed with at least one recombinant **DNA** molecule encoding or otherwise causing the expression of at least one enzyme that causes the

functional coupling of the oxidation and reduction of substrates by 2 pyridine nucleotide-linked dehydrogenase (PNLD) reactions with different specificities for the NAD/NADH and **NADP/NADPH** coenzyme couples and so facilitates the transfer of electrons between the 2 coenzyme couples through the substrates, the transformed **microorganisms** thereby **producing** useful products more efficiently than corresponding non-transformed **microorganisms.**

INDEPENDENT CLAIMS are also included for:

Saccharomyces cerevisiae (SC) strains selected from H1791 (VTT C-98298, DSM 12213), H1795 (VTT C-98300, DSM 12214), H1803 (VTT C-98302, DSM 12215), H2193 (VTT C-99317, DSM 12722), H2195 (VTT C-99320, DSM 12723), and H2222 (VTT C-99322, DSM 12724);

Schizosaccharomyces pombe strains selected from H2369 (VTT C-99323, DSM 12725) and H2370 (VTT C-99324, DSM 12726);

Corynebacteria strains selected from VTT E-991203 and VTT E-991204; and

(1) A **method** of producing ethanol form raw materials comprising pentoses, pentose polymers or mixtures comprising fermenting the starting materials with the above microorganisms.

USE - The **microorganisms** can be used for **producing** products such as ethanol (e.g. from a pentose or hexose), amino acids, e.g. **lysine**, polyhydroxyalkanoate, e.g. polyhydroxybutyrate, or a pentitol, e.g. xylitol.

ADVANTAGE - The microorganisms can increase the efficiency with which raw material is converted to useful products. They can produce more products per unit of raw material, can produce a product faster, produce less CO2 per unit of product produced, and have a reduced oxygen requirement per unit of a product **produced**, as compared to corresponding non-transformed **microorganisms.**

Dwg.0/15

L29 ANSWER 5 OF 7 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER: 1999-563674 [48] WPIDS
DOC. NO. CPI: C1999-164593
TITLE: Increased production of vitamin B6 from 1-deoxy-D-threo-pentulose and 4-hydroxy-L-threonine, useful as medicine and/or food additive.
DERWENT CLASS: B03 D16
INVENTOR(S): HOSHINO, T; TAZOE, M
PATENT ASSIGNEE(S): (HOFF) HOFFMANN LA ROCHE & CO AG F; (STAM) DSM IP ASSETS BV; (HOFF) ROCHE VITAMINS INC
COUNTRY COUNT: 34
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 950715	A2	19991020	(199948)*	EN	10
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
NO 9901738	A	19991018	(199953)		
AU 9923727	A	19991028	(200005)		
CN 1232875	A	19991027	(200010)		
CA 2268539	A1	19991015	(200012)	EN	
JP 2000023690	A	20000125	(200016)		9
US 6060267	A	20000509	(200030)		
BR 9902362	A	20000606	(200036)		
KR 99083143	A	19991125	(200055)		
KR 99083176	A	19991125	(200055)		

MX 9903430 A1 20000201 (200123)
CN 1173044 C 20041027 (200615)

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 950715	A2	EP 1999-106676	19990401
NO 9901738	A	NO 1999-1738	19990413
AU 9923727	A	AU 1999-23727	19990413
CN 1232875	A	CN 1999-105083	19990415
CA 2268539	A1	CA 1999-2268539	19990412
JP 2000023690	A	JP 1999-104958	19990413
US 6060267	A	US 1999-291718	19990414
BR 9902362	A	BR 1999-2362	19990414
KR 99083143	A	KR 1999-12882	19990413
KR 99083176	A	KR 1999-13087	19990414
MX 9903430	A1	MX 1999-3430	19990413
CN 1173044	C	CN 1999-105083	19990415

PRIORITY APPLN. INFO: EP 1998-106812 19980415
AN 1999-563674 [48] WPIDS
AB EP 950715 A UPAB: 19991122
NOVELTY - The production of vitamin B6 from 1-deoxy-D-threo-pentulose (DTP) and 4-hydroxy-L-**threonine** (HT) is new and comprises contacting DTP with an enzyme reaction system **prepared** from the cells of a **microorganism** capable of **producing** vitamin B6 in the presence of **nicotinamide adenine** dinucleotide **phosphate** (**NADP**+), nicotinamide adenine dinucleotide (NAD+) and adenosine triphosphate (ATP).
USE - Vitamin B6 is useful as an efficient vitamin for the nutrition of animals, plants and microorganisms and is also important as a medicine or food additive for humans.
ADVANTAGE - The **method** is useful for the highly efficient production of vitamin B6.
Dwg.0/0

L29 ANSWER 6 OF 7 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 1995-075242 [10] WPIDS
CROSS REFERENCE: 2004-033640 [03]
DOC. NO. CPI: C1995-033502
TITLE: New clavulanic acid dehydrogenase from Streptomyces, and related DNA and vectors - used to produce beta-lactamase inhibiting clavulanic acid from new 3-oxo ethylidene analogues.
DERWENT CLASS: B02 B04 D16
INVENTOR(S): ARNELL, J; ELSON, S W; NICHOLSON, N H; WORONIECKI, S R; NICHOLSON, N H G
PATENT ASSIGNEE(S): (SMIK) SMITHKLINE BEECHAM PLC
COUNTRY COUNT: 57
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9503416	A1	19950202	(199510)*	EN	35

RW: AT BE CH DE DK ES FR GB GR IE IT KE LU MC MW NL OA PT SD SE
W: AM AT AU BB BG BR BY CA CH CN CZ DE DK ES FI GB GE HU JP KE KG KP KR KZ LK LT LU LV MD MG MN MW NL NO NZ PL PT RO RU SD SE SI

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       SK TJ TT UA US UZ VN
AU 9474942      A  19950220 (199521)
EP 711350       A1 19960515 (199624)  EN
    R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE
JP 09502085     W  19970304 (199719)       42
EP 1236729      A1 20020904 (200266)  EN
    R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE SI
EP 711350       B1 20030319 (200325)  EN
    R: AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE SI
DE 69432304     E  20030424 (200335)
ES 2194871      T3 20031201 (200406)
US 6692950      B1 20040217 (200413)
```

APPLICATION DETAILS:

PATENT NO	KIND		APPLICATION	DATE
WO 9503416	A1		WO 1994-EP2346	19940715
AU 9474942	A		AU 1994-74942	19940715
EP 711350	A1		EP 1994-924775	19940715
			WO 1994-EP2346	19940715
JP 09502085	W		WO 1994-EP2346	19940715
			JP 1995-504921	19940715
EP 1236729	A1	Div ex	EP 1994-924775	19940715
			EP 2002-77067	19940715
EP 711350	B1		EP 1994-924775	19940715
			WO 1994-EP2346	19940715
		Related to	EP 2002-77067	19940715
DE 69432304	E		DE 1994-632304	19940715
			EP 1994-924775	19940715
			WO 1994-EP2346	19940715
ES 2194871	T3		EP 1994-924775	19940715
US 6692950	B1		WO 1994-EP2346	19940715
			US 1996-586664	19960403

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9474942	A	Based on	WO 9503416
EP 711350	A1	Based on	WO 9503416
JP 09502085	W	Based on	WO 9503416
EP 1236729	A1	Div ex	EP 711350
EP 711350	B1	Related to	EP 1236729
		Based on	WO 9503416
DE 69432304	E	Based on	EP 711350
		Based on	WO 9503416
ES 2194871	T3	Based on	EP 711350
US 6692950	B1	Based on	WO 9503416

PRIORITY APPLN. INFO: GB 1993-15393 19930724

AN 1995-075242 [10] WPIDS

CR 2004-033640 [03]

AB WO 9503416 A UPAB: 20040223

New enzyme (I) with clavulanic acid dehydrogenase (CAD) activity has apparent mol wt 28 kb (by SDS-PAGE) and the N-terminal sequence PSALQGKVALITGASSGIGE. Also new are (1) CAD from Streptomyces mycelium; (2) **DNA** (II) encoding CAD (the specification includes a 1020 bp sequence from S. clavuligerus ATCC 27064, and the corresponding 238

amino acid protein sequence); (3) **DNA** (III) hybridising with (II), or its fragments, under high stringency conditions and encoding enzyme with CAD activity; (4) a vector containing the **DNA**; and (5) cpds of formula (A) and their salts: (R= H or Na).

USE - (A) are beta-lactamase inhibitors while the esters (cpd with R=Me or benzyl) can be converted to clavulanic acid (CA) by contact with (I) (opt **produced** by a **microorganism** having a high copy number of a gene encoded by (II) or (III)). CA is an ingredient of the antibiotic 'Augmentin' (RTM); it is now found that the final step in its biosynthesis is redn of the side chain aldehyde in (A) by (I), using **NADPH** as H donor. **DNA** probes can be used to isolate related or overlapping genes from total cellular **DNA**, while vectors contg the **DNA** can be used to generate **modified microorganisms** for synthesis of increased amounts of CA or to **produce** new or hybrid antibiotics.

ADVANTAGE - (A) is about 100 times more active than CA as a beta-lactamase inhibitor but has a very short half life. Redn with (1) is rapid, allowing yields of CA to be maximised.

Dwg.0/4

L29 ANSWER 7 OF 7 JAPIO (C) 2006 JPO on STN

ACCESSION NUMBER: 2001-103988 JAPIO
TITLE: DNA SEQUENCE
INVENTOR: STRASSER ALEXANDER W M DR; HOLLENBERG CORNELIS P; CIRIACY-WANTRUP MICHAEL VON; KOETTER PETER; AMORE RENE; PIONTEK MICHAEL; HAGEDORN JUTTA
PATENT ASSIGNEE(S): RHEIN BIOTECH G FUER NEUE BIOTECHNOL PROZESSE & PROD MBH

PATENT INFORMATION:

PATENT NO	KIND	DATE	ERA	MAIN IPC
JP 2001103988	A	20010417	Heisei	C12N015-09

APPLICATION INFORMATION

STN FORMAT:	JP 2000-276227	19910326
ORIGINAL:	JP2000276227	Heisei

PRIORITY APPLN. INFO.: DE 1990-40096769 19900326
SOURCE: PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2001

AN 2001-103988 JAPIO

AB PROBLEM TO BE SOLVED: To provide a **DNA** sequence containing a structural gene encoding xylitol dehydrogenase (XYL2) and capable of expressrng the polypeptide in a microorganism, a combination of the **DNA** sequence, a vector, the **microorganism**, a **manufacturing method** for the XYL2 and the XYL2 as a protein and a producing **method** for **NADP**+ from **NADPH** by using a xylose resource, which is conventionally considered as a waste, as a carbon resource for ethanol fermentation or biomass production.

SOLUTION: This invention discloses cloning of **DNA** encoding the XYL2 which is a key for utilization of xylose, providing a tool useful for gene expression such as promoter or the like, a vector for transformation of a host cell mainly comprising a yeast, the host cell, an enzyme obtained by the expression and condition setting to succeed anaerobic fermentation. Microorganisms preferably used are Saccharomyces cerevisiae or Schizosaccharomyces probe.

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FILE 'MEDLINE' ENTERED AT 11:55:55 ON 16 MAR 2006

FILE LAST UPDATED: 15 MAR 2006 (20060315/UP). FILE COVERS 1950 TO DATE.

On December 11, 2005, the 2006 MeSH terms were loaded.

The MEDLINE reload for 2006 is now (26 Feb.) available. For details on the 2006 reload, enter HELP RLOAD at an arrow prompt (=>).
See also:

http://www.nlm.nih.gov/mesh/
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html
http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_med_data_changes.html
http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_2006_MeSH.html

OLDMEDLINE is covered back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2006 vocabulary.

This file contains CAS Registry Numbers for easy and accurate substance identification.

L30 625 SEA FILE=MEDLINE ABB=ON PLU=ON (NADP AND (METHIONINE OR CYSTEINE OR THREONINE OR LYSINE OR ISOLEUCINE OR SUGARS OR NUCLEIC ACIDS OR LIPIDS))/CT
L32 68295 SEA FILE=MEDLINE ABB=ON PLU=ON BACTERIA/CT
L34 4 SEA FILE=MEDLINE ABB=ON PLU=ON L30 AND L32

L34 ANSWER 1 OF 4 MEDLINE on STN
ACCESSION NUMBER: 2004581110 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15550941
TITLE: Bacterial redox sensors.
AUTHOR: Green Jeffrey; Paget Mark S
CORPORATE SOURCE: Krebs Institute for Biomolecular Research, Department of Molecular Biology and Biotechnology, University of Sheffield, Western Bank, Sheffield S10 2TN, United Kingdom.. Jeff.Green@sheffield.ac.uk
SOURCE: Nature reviews. Microbiology, (2004 Dec) Vol. 2, No. 12, pp. 954-66. Ref: 120
Journal code: 101190261. ISSN: 1740-1526.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200412
ENTRY DATE: Entered STN: 20041123
Last Updated on STN: 20041223
Entered Medline: 20041222
ED Entered STN: 20041123
Last Updated on STN: 20041223
Entered Medline: 20041222
AB Redox reactions pervade living cells. They are central to both anabolic and catabolic metabolism. The ability to maintain redox balance is therefore vital to all organisms. Various regulatory sensors continually monitor the redox state of the internal and external environments and control the processes that work to maintain

redox homeostasis. In response to redox imbalance, new metabolic pathways are initiated, the repair or bypassing of damaged cellular components is coordinated and systems that protect the cell from further damage are induced. Advances in biochemical analyses are revealing a range of elegant solutions that have evolved to allow bacteria to sense different redox signals.

L34 ANSWER 2 OF 4 MEDLINE on STN
ACCESSION NUMBER: 74083372 MEDLINE
DOCUMENT NUMBER: PubMed ID: 4149299
TITLE: Desaturation and saturation of fatty acids by sheep rumen bacteria: optimal conditions and cofactor requirements.
AUTHOR: Sklan D; Budowski P
SOURCE: Journal of dairy science, (1974 Jan) Vol. 57, No. 1, pp. 56-60.
Journal code: 2985126R. ISSN: 0022-0302.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197403
ENTRY DATE: Entered STN: 19900310
Last Updated on STN: 19950206
Entered Medline: 19740320
ED Entered STN: 19900310
Last Updated on STN: 19950206
Entered Medline: 19740320

L34 ANSWER 3 OF 4 MEDLINE on STN
ACCESSION NUMBER: 74027304 MEDLINE
DOCUMENT NUMBER: PubMed ID: 4148026
TITLE: A theoretical study on the amount of ATP required for synthesis of microbial cell material.
AUTHOR: Stouthamer A H
SOURCE: Antonie van Leeuwenhoek, (1973) Vol. 39, No. 3, pp. 545-65.
Journal code: 0372625. ISSN: 0003-6072.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197401
ENTRY DATE: Entered STN: 19900310
Last Updated on STN: 19950206
Entered Medline: 19740114
ED Entered STN: 19900310
Last Updated on STN: 19950206
Entered Medline: 19740114

L34 ANSWER 4 OF 4 MEDLINE on STN
ACCESSION NUMBER: 70158509 MEDLINE
DOCUMENT NUMBER: PubMed ID: 4392412
TITLE: Identification of O-alkyldihydroxyacetone phosphate, O-alkyldihydroxyacetone, and diacyl glyceryl ethers after enzymic synthesis.
AUTHOR: Snyder F; Blank M L; Malone B; Wykle R L
SOURCE: The Journal of biological chemistry, (1970 Apr 10) Vol. 245, No. 7, pp. 1800-5.

Searcher : Shears 571-272-2528

Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 197005
ENTRY DATE: Entered STN: 19900101
Last Updated on STN: 19970203
Entered Medline: 19700526
ED Entered STN: 19900101
Last Updated on STN: 19970203
Entered Medline: 19700526

(FILE 'CAPLUS, MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO' ENTERED AT 12:03:10 ON 16 MAR 2006)

L35 263 SEA ABB=ON PLU=ON "CHATEAU M"?/AU — Author(s)
L36 6840 SEA ABB=ON PLU=ON "GONZALEZ B"?/AU
L37 82 SEA ABB=ON PLU=ON ("MEYNIAL SALLES I"? OR "SALLES MEYNIAL I"? OR "SALLES I"? OR "MEYNIAL I"?)/AU
L38 301 SEA ABB=ON PLU=ON "SOUCAILLE P"?/AU
L39 19 SEA ABB=ON PLU=ON "ZINK O"?/AU
L40 2 SEA ABB=ON PLU=ON L35 AND L36 AND L37 AND L38 AND L39
L41 11 SEA ABB=ON PLU=ON L35 AND (L36 OR L37 OR L38 OR L39)
L42 7 SEA ABB=ON PLU=ON L36 AND (L37 OR L38 OR L39)
L43 32 SEA ABB=ON PLU=ON L37 AND (L38 OR L39)
L44 4 SEA ABB=ON PLU=ON L38 AND L39
L45 7451 SEA ABB=ON PLU=ON L35 OR L36 OR L37 OR L38 OR L39
L46 2 SEA ABB=ON PLU=ON (L43 OR L45) AND L14
L47 12 SEA ABB=ON PLU=ON L40 OR L41 OR L44 OR L46 OR L42
L48 7 DUP REM L47 (5 DUPLICATES REMOVED)

L48 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2005:1239041 CAPLUS
DOCUMENT NUMBER: 144:2275
TITLE: Construction of microorganism containing recombinant homoserine transsuccinylase with altered feedback sensitivity and recombinant S-adenosylmethionine synthetase with reduced activity for the production of methionine
INVENTOR(S): Bestel-Corre, Gwenaeelle Anne Lise; **Chateau, Michel**; Figge, Rainer Martin; Raynaud, Celine; **Soucaille, Philippe Noeel Paul**
PATENT ASSIGNEE(S): Metabolic Explorer, Fr.
SOURCE: PCT Int. Appl., 72 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005111202	A1	20051124	WO 2004-IB1901	20040512

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,

VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

WO 2005108561 A2 20051117 WO 2005-EP52180 20050512
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: WO 2004-IB1901 A 20040512

AB The present invention relates to the use of recombinant homoserine transsuccinylase with altered sensitivity to feedback inhibitors S-adenosylmethionine and methionine (MetA*) and optionally, recombinant S-adenosylmethionine synthetase with reduced activity (MetK*) for the production of methionine, its precursors or derivs. thereof. More specifically, the authors isolated Escherichia coli mutants containing homoserine transsuccinylase which show decreased feedback-sensitivity towards S-adenosylmethionine and methionine. E. coli mutants containing S-adenosylmethionine synthetase with reduced activity were also isolated. Construction of E. coli strains for the production of O-succinylhomoserine or methionine by combining feed-back resistant MetA alleles with MetK alleles with decreased activity is described. Fermentation of E. coli production strains and anal. of yield is reported.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2005:1220814 CAPLUS
DOCUMENT NUMBER: 143:474228
TITLE: Construction of microbial recombinant homoserine transsuccinylase with altered feedback sensitivity and S-adenosyl methionine synthetase with reduced activity for the production of methionine
INVENTOR(S): Bestel-Corre, Gwenaeelle; **Chateau, Michel**; Figge, Rainer Martin; Raynaud, Celine; **Soucaille, Philippe Noel Paul**
PATENT ASSIGNEE(S): Metabolic Explorer, Fr.
SOURCE: PCT Int. Appl., 46 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 2005108561 A2 20051117 WO 2005-EP52180 20050512
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
WO 2005111202 A1 20051124 WO 2004-IB1901 20040512
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRIORITY APPLN. INFO.: WO 2004-IB1901 A 20040512

OTHER SOURCE(S): MARPAT 143:474228

AB The present invention relates to the use of recombinant homoserine transsuccinylase with altered feedback sensitivity (MetA*) and eventually, recombinant S-adenosyl methionine synthetase with reduced activity (MetK*) for the production of methionine, its precursors or derivs. thereof. More specifically, Escherichia coli mutants containing homoserine transsuccinylase with decreased feedback sensitivity towards methionine and S-adenosylmethionine were isolated. E. coli mutants containing S-adenosyl methionine synthetase with reduced activity were also isolated. Construction of E. coli strains for the production of O-succinylhomoserine or methionine by combined feed-back resistant MetA alleles with MetK alleles with decreased activity is described. Fermentation of E. coli production strains and anal. of yield is reported.

L48 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 2005:408107 CAPLUS
DOCUMENT NUMBER: 142:458102
TITLE: Mutagenesis and biotransformation to optimize NADPH/NADP ratios and metabolite biosynthesis in microorganisms
INVENTOR(S): Boisart, Cedric; **Chateau, Michel; Gonzalez, Benjamin; Soucaille, Philippe Noel Paul; Zink, Olivier**
PATENT ASSIGNEE(S): Metabolic Explorer, Fr.
SOURCE: Fr. Demande, 34 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2862068	A1	20050513	FR 2003-13056	20031106
WO 2005047498	A1	20050526	WO 2004-FR2848	20041105

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: FR 2003-13056 A 20031106

AB The present invention relates to mutagenesis and biotransformation for optimizing NADPH/NADP ratios and metabolite biosynthesis in microorganism stocks. The stocks according to the invention are usable in processes of NADPH-dependent biotransformation, with examples demonstrating either xylose to xylitol bioconversion or glucose fermentation for production of cysteine or hydrocortisone. In order to promote these NADPH-dependent reactions, mutagenesis of genes encoding metabolic enzymes was performed, examples of which include genes udhA, qor, and pgi. The intended use of these modified microbial strains is improved production of a wide range of biomols. including amino acids, vitamins, sterols, flavonoids, fatty acids, polyols and organic acids.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 4 OF 7 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN

ACCESSION NUMBER: 2005-524370 [54] WPIDS

DOC. NO. CPI: C2005-159317

TITLE: Preparation of micro-organisms for production of 1,2-propanediol for use e.g. in polyesters, involves culture of an initial strain with deletion of certain genes and evolution of genes with better propanediol synthase activity.

DERWENT CLASS: A41 D16 E17

INVENTOR(S): GONZALES, B; MEYNIAL, S I; **SOUCAILLE, P N P ; GONZALEZ, B; MEYNIAL-SALLES, I; SOUCAILLE, P**

PATENT ASSIGNEE(S): (META-N) METABOLIC EXPLORER

COUNTRY COUNT: 108

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
FR 2864967	A1	20050715	(200554)*		48
WO 2005073364	A2	20050811	(200554)	FR	

RW: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IS IT KE LS LT LU MC MW MZ NA NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP

KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA
NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR
TT TZ UA UG US UZ VC VN YU ZA ZM ZW

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
FR 2864967	A1	FR 2004-214	20040112
WO 2005073364	A2	WO 2005-FR70	20050112

PRIORITY APPLN. INFO: FR 2004-214 20040112
AN 2005-524370 [54] WPIDS
AB FR 2864967 A UPAB: 20050823
NOVELTY - Micro-organisms capable of the production of 1,2-propanediol from a simple source of carbon (I) are obtained by selective culture of an initial strain in presence of (I), by deleting the tpiA gene and the gene(s) involved in the conversion of methylglyoxal into lactate and causing the evolution of genes with improved 1,2-propanediol synthase activity.

DETAILED DESCRIPTION - Method (M1) for the preparation of a strain of micro-organisms capable of the production of 1,2-propanediol (PD) by metabolism of a simple source of carbon (I). This involves:

(a) the selective culture of an initial strain in a suitable culture medium containing (I) by deletion of the gene tpiA and of at least one gene involved in the conversion of methylglyoxal (propanal) into lactate, in order to bring about the evolution in this initial strain of one or more genes involved in the biosynthetic route from DHAP to methylglyoxal and then to PD into genes with improved PD-synthase activity, followed by;

(b) selection and isolation of the improved strain(s).

INDEPENDENT CLAIMS are also included for

(1) an initial strain as defined above

(2) the evolved strain obtained by this method

(3) method (M2) for the production of PD by culturing the evolved strain in a suitable medium containing a simple source of carbon, and then isolating the PD obtained.

USE - Propane-1,2-diol obtained by this method is used, e.g. for the production of unsaturated polyester resins, liquid detergents, coolants and aircraft de-icing fluids.

ADVANTAGE - A biological method enabling the simultaneous production of 1,2-propanediol and acetone from a simple source of carbon.

Dwg.0/2

L48 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 4
ACCESSION NUMBER: 2004:740475 CAPLUS
DOCUMENT NUMBER: 141:239279
TITLE: Method for production of evolved microorganisms with modified metabolic pathways
INVENTOR(S): **Chateau, Michel; Gonzalez, Benjamin; Meynial-Salles, Isabelle; Soucaille, Philippe Noeel Paul; Zink, Olivier**
PATENT ASSIGNEE(S): Metabolic Explorer, Fr.
SOURCE: PCT Int. Appl., 113 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent

LANGUAGE: French
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004076659	A2	20040910	WO 2004-FR354	20040217
WO 2004076659	A3	20041216		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
FR 2851256	A1	20040820	FR 2003-1924	20030218
FR 2851255	A1	20040820	FR 2003-5768	20030514
FR 2854902	A1	20041119	FR 2003-5769	20030514
FR 2862067	A1	20050513	FR 2003-13054	20031106
EP 1597364	A2	20051123	EP 2004-711626	20040217
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				

PRIORITY APPLN. INFO.:			
FR 2003-1924	A	20030218	
FR 2003-5768	A	20030514	
FR 2003-5769	A	20030514	
FR 2003-13054	A	20031106	
WO 2004-FR354	W	20040217	

AB The invention relates to a method for the **preparation** of evolved **microorganisms** which permit a modification of metabolic pathways, characterized in comprising the following steps: (a) **production** of a modified **microorganism** by genetic modification of initial microbial in order to inhibit the **production** of or the consumption of a metabolite when the **microorganism** is cultivated in a defined medium which also affects the capacity of the microorganism for growth, (b) culture of the modified microorganisms previously obtained in said defined medium to induce evolution where it might be necessary to add a co-substrate to the defined medium in order to permit said evolution, (c) selection of modified microorganisms which are capable of growth in the defined medium, optionally with a co-substrate. Thus, E. coli ΔMetE mutants were prepared These **methionine** synthase deletion mutants are **Met** auxotrophs. Growth of these mutants in minimal medium containing methylmercaptan resulted in the growth of E. coli strains with **methionine** synthase activity. This activity was supplied by a mutated cystathionine γ-synthase gene (metB*). The Km's for methylmercaptan of MetB (wild-type) and of MetB* were 277 and 6 mM, resp. The corresponding Vmax values were 13.9 and 5.6 mU/mg protein, resp. The Km (for **cysteine**) and Vmax of the cystathionine γ-synthase activity of the MetB* enzyme were reduced 13-fold. Comparison of wild-type and mutant E. coli grown on minimal medium containing glucose and methylmercaptan indicated that the mutant produced more intracellular Ala, pyruvate,

ketobutyrate, and 2-ketoisocaproate and less Trp, NVal, NLeu, Leu, and **Met.** Addnl., the mutant produced more extracellular Glu, **Ile, Thr,** Val, and 2-ketoisocaproate and less pyruvate, NLeu, and Trp.

L48 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 5
ACCESSION NUMBER: 2004:680008 CAPLUS
DOCUMENT NUMBER: 141:205767
TITLE: Screening and development of bacteria producing methionine by a new metabolic path
INVENTOR(S): **Chateau, Michel; Gonzalez, Benjamin; Soucaille, Philippe Noel Paul**
PATENT ASSIGNEE(S): Metabolic Explorer, Fr.
SOURCE: Fr. Demande, 30 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2851256	A1	20040820	FR 2003-1924	20030218
FR 2851255	A1	20040820	FR 2003-5768	20030514
WO 2004076659	A2	20040910	WO 2004-FR354	20040217
WO 2004076659	A3	20041216		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1597364	A2	20051123	EP 2004-711626	20040217
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2005054060	A1	20050310	US 2004-781499	20040218

PRIORITY APPLN. INFO.:

FR 2003-1924	A	20030218
FR 2003-5768	A	20030514
FR 2003-5769	A	20030514
FR 2003-13054	A	20031106
WO 2004-FR354	W	20040217

AB The present invention refers to a method of obtaining a genetically modified microorganism producing 2-amino-4-(alkylmercapto)butyric acid starting from acylhomoserine and alkyl-mercaptan. In particular, the aforementioned micro-organism produces L-methionine, by metabolizing a simple carbon source such as glucose or sucrose and methyl-mercaptan.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 7 OF 7 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 2004-618123 [60] WPIDS
CROSS REFERENCE: 2004-618124 [60]; 2004-653418 [63]
DOC. NO. CPI: C2004-222428
TITLE: New strains of microorganisms that produce 2-amino-4-alkylthio-butyric acid, useful for preparing L-methionine, from simple carbon source and a mercaptan or its salt, have modified methionine synthase activity.
DERWENT CLASS: B04 B05 D16
INVENTOR(S): **CHATEAU, M**; GONZALES, B; **SOUCAILLE, P**
N P
PATENT ASSIGNEE(S): (META-N) METABOLIC EXPLORER
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
FR 2851255	A1	20040820	(200460)*		68

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
FR 2851255	A1	FR 2003-5768	20030514

PRIORITY APPLN. INFO: FR 2003-1924 20030218
AN 2004-618123 [60] WPIDS
CR 2004-618124 [60]; 2004-653418 [63]
AB FR 2851255 A UPAB: 20041001
NOVELTY - Strain (A) of a microorganism which produces a 2-amino-4-alkylthio-butyric acid (I) by metabolizing a simple sugar and a thiol (II), or its salt, and has at least one gene encoding an enzyme with modified methionine synthase (MS) activity.

DETAILED DESCRIPTION - Strain (A) of a microorganism which produces a 2-amino-4-alkylthio-butyric acid of formula (I) RS-(CH2)2-CHNH2-COOH (I) by metabolizing a simple sugar and a thiol (II), R'-SH, or its salt, and has at least one gene encoding an enzyme with modified methionine synthase (MS) activity.

R = 1-8C linear or branched alkyl, optionally substituted by one or more hydroxy or by (hetero)aryl with one or more nitrogen or sulfur atoms in the ring, i.e. phenyl, pyridyl, pyrroly, pyrazolyl, triazolyl, tetrazolyl, thiazolyl or thienyl;

R' = hydrogen or as R.

INDEPENDENT CLAIMS are also included for the following:

(1) modified cystathionine gamma -synthase (X) having MS activity;

(2) nucleic acid (NA) that encodes (X);

(3) cloning and/or expression vector containing (NA) and elements for regulating expression and transcription of (X);

(4) method of screening for a bacterial strain that has a gene encoding (X) or an acylhomoserine sulfhydrylase (Y), for preparation of (A); and

(5) method for producing (I) by culturing (A) or by using MS activity present in activated bacteria or their extracts.

USE - (A) are specifically used for fermentative production of L-methionine.

ADVANTAGE - (A) produce L-methionine from a simple carbon source

and alkylmercaptan, i.e. synthesis of L-Met is independent of synthesis of cysteine; the methyl mercaptan used is a toxic waste product from the petrochemical industry and synthesis of L-Met occurs in a single step from O-(acetyl or succinyl)-L-homoserine.
Dwg.0/9

FILE 'HOME' ENTERED AT 12:12:40 ON 16 MAR 2006

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=> d his ful

     (FILE 'CAPLUS' ENTERED AT 11:10:09 ON 16 MAR 2006)
                DEL HIS Y
                D COST

     FILE 'REGISTRY' ENTERED AT 11:30:13 ON 16 MAR 2006
                E METHIONINE/CN
L1            2 SEA ABB=ON  PLU=ON  METHIONINE/CN
                E CYSTEINE/CN 5
L2            2 SEA ABB=ON  PLU=ON  CYSTEINE/CN
                E CYSTEIN/CN 5
L3            1 SEA ABB=ON  PLU=ON  CYSTEIN/CN
L*** DEL      2 S L2 OR L3
L*** DEL      4 S (THREONINE OR LYSINE OR ISOLEUSINE)/CN
L4            6 SEA ABB=ON  PLU=ON  (THREONINE OR LYSINE OR ISOLEUCINE)/CN

                E CARBOHYDRATES/CN 5
                E CARBOHYDRATE/CN 5
L5           10 SEA ABB=ON  PLU=ON  L1 OR L2 OR L3 OR L4
                E NADPH/CN 5
L6            1 SEA ABB=ON  PLU=ON  NADPH/CN
                E NADP/CN 5
L7            1 SEA ABB=ON  PLU=ON  NADP/CN
L8            2 SEA ABB=ON  PLU=ON  L6 OR L7

     FILE 'HCAPLUS' ENTERED AT 11:32:28 ON 16 MAR 2006
L9        27590 SEA ABB=ON  PLU=ON  (L5 OR METHIONINE OR CYSTEIN# OR
                THREONINE OR LYSINE OR ISOLEUCINE OR ISO LEUCINE OR SUGAR
                OR CARBOHYDRATE OR NUCLEIC OR DNA OR DEOXYRIBONUCLEIC OR
                DEOXY RIBONUCLEIC OR LIPID OR LYS OR MET OR CYS OR THR OR
                LYS OR ILE) AND (MICROORGANISM OR MICRO ORGANISM)
L10         228 SEA ABB=ON  PLU=ON  L9 AND (L8 OR NADPH OR NADP OR
                (COENZYME OR CO ENZYME)(W)(II OR 2) OR NICOTINAMIDE
                ADENINE(2W)PHOSPHATE OR (TRIPHOSPHOPYRIDINE OR TRI(W)(PHOSP
                HOPYRIDINE OR PHOSPHO PYRIDINE) OR TRIPHOSPHO PYRIDINE)(W)N
                UCLEOTIDE)
L11         146 SEA ABB=ON  PLU=ON  L10 AND (PREP? OR PRODUCE# OR PRODUCING
                 OR PROD# OR MANUF?)
L12       16860 SEA ABB=ON  PLU=ON  (MICROORGANISM OR MICRO ORGANISM)(10A)(
                PREP? OR PRODUCE# OR PRODUCING OR PROD# OR MANUF?)
L13        3502 SEA ABB=ON  PLU=ON  L12 AND (L5 OR METHIONINE OR CYSTEIN#
                OR THREONINE OR LYSINE OR ISOLEUCINE OR ISO LEUCINE OR
                SUGAR OR CARBOHYDRATE OR NUCLEIC OR DNA OR DEOXYRIBONUCLEIC
                 OR DEOXY RIBONUCLEIC OR LIPID OR LYS OR MET OR CYS OR THR
                OR LYS OR ILE)
L14          77 SEA ABB=ON  PLU=ON  L13 AND (L8 OR NADPH OR NADP OR
                (COENZYME OR CO ENZYME)(W)(II OR 2) OR NICOTINAMIDE
                ADENINE(2W)PHOSPHATE OR (TRIPHOSPHOPYRIDINE OR TRI(W)(PHOSP
                HOPYRIDINE OR PHOSPHO PYRIDINE) OR TRIPHOSPHO PYRIDINE)(W)N
                UCLEOTIDE)
L*** DEL      1 S L14 AND CHATEAU ?/AU
                D KWIC
L*** DEL      1 S L15 AND CULTUR?
L15           5 SEA ABB=ON  PLU=ON  L14 AND CULTUR?
                D KWIC

     FILE 'REGISTRY' ENTERED AT 11:39:51 ON 16 MAR 2006
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     FILE 'HCAPLUS' ENTERED AT 11:39:51 ON 16 MAR 2006
                D QUE L15
                D L15 1-5 .BEVSTR

     FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH,
     JICST-EPLUS, JAPIO' ENTERED AT 11:39:52 ON 16 MAR 2006
L16           25 SEA ABB=ON  PLU=ON  L15
L17           25 DUP REM L16 (0 DUPLICATES REMOVED)
                D 1-25 IBIB ABS

     FILE 'REGISTRY' ENTERED AT 11:43:52 ON 16 MAR 2006
                D CN L6
                D CN L7

     FILE 'HCAPLUS' ENTERED AT 11:44:28 ON 16 MAR 2006
L18         2213 SEA ABB=ON  PLU=ON  L12(L)(L5 OR METHIONINE OR CYSTEIN# OR
                 THREONINE OR LYSINE OR ISOLEUCINE OR ISO LEUCINE OR SUGAR
                 OR CARBOHYDRATE OR NUCLEIC OR DNA OR DEOXYRIBONUCLEIC OR
                 DEOXY RIBONUCLEIC OR LIPID OR LYS OR MET OR CYS OR THR OR
                 LYS OR ILE)
L19           16 SEA ABB=ON  PLU=ON  L18(L)(L8 OR NADPH OR NADP OR (COENZYME
                  OR CO ENZYME)(W)(II OR 2) OR NICOTINAMIDE ADENINE(2W)PHOSP
                 HATE OR (TRIPHOSPHOPYRIDINE OR TRI(W)(PHOSPHOPYRIDINE OR
                 PHOSPHO PYRIDINE) OR TRIPHOSPHO PYRIDINE)(W)NUCLEOTIDE)
                D QUE
L20           13 SEA ABB=ON  PLU=ON  L19 NOT L15
                D 1-13 .BEVSTR

     FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH,
     JICST-EPLUS, JAPIO' ENTERED AT 11:47:38 ON 16 MAR 2006
L21           52 SEA ABB=ON  PLU=ON  L19
L22           38 SEA ABB=ON  PLU=ON  L21 NOT L16
L23           24 DUP REM L22 (14 DUPLICATES REMOVED)
                D QUE
                D QUE L21
L24            1 SEA ABB=ON  PLU=ON  L21 AND "CHATEAU"?/AU
                D KWIC
L25            4 SEA ABB=ON  PLU=ON  L21(L) MODIF?
L26            1 SEA ABB=ON  PLU=ON  L21(L) EVOLV?
                D KWIC
L27           14 SEA ABB=ON  PLU=ON  L21(L)(METHOD OR TECHNIQUE)
L28            7 SEA ABB=ON  PLU=ON  (L25 OR L26 OR L27) NOT L16
L29            7 DUP REM L28 (0 DUPLICATES REMOVED)
                D QUE L25
                D QUE L26
                D QUE L27
                D 1-7 IBIB ABS

     FILE 'MEDLINE' ENTERED AT 11:55:55 ON 16 MAR 2006
L*** DEL       0 S (MICROORGANISM AND NADP)/CT
L*** DEL       0 S (MICROORGANISMS AND NADP)/CT

     FILE 'STNGUIDE' ENTERED AT 11:56:43 ON 16 MAR 2006

     FILE 'MEDLINE' ENTERED AT 11:56:51 ON 16 MAR 2006
L*** DEL     606 S (NADP AND (METHIONINE OR CYSTEINE OR THREONINE OR LYSINE
L30          625 SEA ABB=ON  PLU=ON  (NADP AND (METHIONINE OR CYSTEINE OR
                 THREONINE OR LYSINE OR ISOLEUCINE OR SUGARS OR NUCLEIC
                 ACIDS OR LIPIDS))/CT
```

Searcher : Shears 571-272-2528

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L*** DEL      0 S L30 AND CHATEAU ?/AU
L*** DEL      0 S L30 AND METHODS & TECHNIQUES/CT
L*** DEL      0 S L30 AND METHODS AND TECHNIQUES/CT
L31          24 SEA ABB=ON  PLU=ON  L30 AND METHODS/CT
                D KWIC
                E BACTERIA/CT 5
L32       68295 SEA ABB=ON  PLU=ON  BACTERIA/CT
L33           0 SEA ABB=ON  PLU=ON  L31 AND L32
L34           4 SEA ABB=ON  PLU=ON  L30 AND L32
                D QUE
                D L34 1-4 .BEVERLYMED

     FILE 'CAPLUS, MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH,
     JICST-EPLUS, JAPIO' ENTERED AT 12:03:10 ON 16 MAR 2006
L35         263 SEA ABB=ON  PLU=ON  "CHATEAU M"?/AU
L36        6840 SEA ABB=ON  PLU=ON  "GONZALEZ B"?/AU
L37          82 SEA ABB=ON  PLU=ON  ("MEYNIAL SALLES I"? OR "SALLES
                MEYNIAL I"? OR "SALLES I"? OR "MEYNIAL I"?)/AU
L38         301 SEA ABB=ON  PLU=ON  "SOUCAILLE P"?/AU
L39          19 SEA ABB=ON  PLU=ON  "ZINK O"?/AU
L40           2 SEA ABB=ON  PLU=ON  L35 AND L36 AND L37 AND L38 AND L39
L41          11 SEA ABB=ON  PLU=ON  L35 AND (L36 OR L37 OR L38 OR L39)
L42           7 SEA ABB=ON  PLU=ON  L36 AND (L37 OR L38 OR L39)
L43          32 SEA ABB=ON  PLU=ON  L37 AND (L38 OR L39)
L44           4 SEA ABB=ON  PLU=ON  L38 AND L39
L45        7451 SEA ABB=ON  PLU=ON  L35 OR L36 OR L37 OR L38 OR L39
L46           2 SEA ABB=ON  PLU=ON  (L43 OR L45) AND L14
L47          12 SEA ABB=ON  PLU=ON  L40 OR L41 OR L44 OR L46 OR L42
L48           7 DUP REM L47 (5 DUPLICATES REMOVED)
                D 1-7 IBIB ABS

     FILE 'HOME' ENTERED AT 12:12:40 ON 16 MAR 2006


     FILE REGISTRY
     Property values tagged with IC are from the ZIC/VINITI data file
     provided by InfoChem.

     STRUCTURE FILE UPDATES:   14 MAR 2006  HIGHEST RN 876856-38-1
     DICTIONARY FILE UPDATES:  14 MAR 2006  HIGHEST RN 876856-38-1

     New CAS Information Use Policies, enter HELP USAGETERMS for details.

     TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

       Please note that search-term pricing does apply when
       conducting SmartSELECT searches.

     ************************************************************
     *                                                          *
     * The CA roles and document type information have been removed from *
     * the IDE default display format and the ED field has been added,   *
     * effective March 20, 2005.  A new display format, IDERL, is now    *
     * available and contains the CA role and document type information. *
     *                                                          *
     ************************************************************

     Structure search iteration limits have been increased.  See HELP SLIMI
     for details.

                    Searcher    :     Shears     571-272-2528
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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

FILE HCAPLUS

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FILE COVERS 1907 - 16 Mar 2006 VOL 144 ISS 12
FILE LAST UPDATED: 15 Mar 2006 (20060315/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE MEDLINE
FILE LAST UPDATED: 15 MAR 2006 (20060315/UP). FILE COVERS 1950 TO DA

On December 11, 2005, the 2006 MeSH terms were loaded.

The MEDLINE reload for 2006 is now (26 Feb.) available. For details on the 2006 reload, enter HELP RLOAD at an arrow prompt (=>). See also:

http://www.nlm.nih.gov/mesh/
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html
http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_med_data_changes.ht
http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_2006_MeSH.html

OLDMEDLINE is covered back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2006 vocabulary.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE BIOSIS
FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 15 March 2006 (20060315/ED)

FILE EMBASE

Searcher : Shears 571-272-2528

FILE COVERS 1974 TO 10 Mar 2006 (20060310/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

The updates on February 20 and 24, 2006, were incomplete due to a technical problem. The problem has been corrected, and the missing records were included in the update on March 3, 2006. If you received SDI results from the original updates on February 20 and 24, you will automatically be credited for the update that was rerun on March 3.

If you have any questions, please contact your STN Service Center.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE WPIDS
FILE LAST UPDATED: 15 MAR 2006 <20060315/UP>
MOST RECENT DERWENT UPDATE: 200618 <200618/DW>
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

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